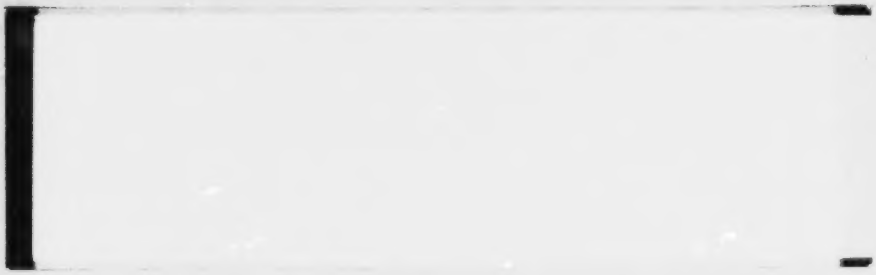

WEST ISLES FEASIBILITY STUDY

A STUDY TO ASSESS THE FEASIBILITY OF
ESTABLISHING A NATIONAL MARINE PARK
IN THE WEST ISLES AREA OF
THE BAY OF FUNDY, NEW BRUNSWICK

TASK REPORT

Parks Canada Parcs Canada

Tourism New Brunswick Tourisme Nouveau-Brunswick

HISTORICAL/ARCHAEOLOGY CONCERNS AND OPPORTUNITIES IN WESTERN CHARLOTTE COUNTY, NEW BRUNSWICK

FOREWORD

The West Isles Feasibility Study was initiated by the federal Minister of the Environment responsible for Parks Canada and the New Brunswick Minister of Tourism in November, 1983. The purpose of the study is to assess the feasibility of establishing a national marine park in the West Isles area of the Bay of Fundy.

The West Isles Feasibility Study is being conducted in three phases. Phase I is an assessment of the technical feasibility of establishing a national marine park in the West Isles area, from the perspective of Parks Canada and Tourism New Brunswick. If Ministers decide to proceed with the study, Phase II would involve extensive public consultation to provide the local public with the opportunity to become directly involved in the process to decide whether or not the West Isles proposal is feasible. The purpose of Phase III would be to analyse the results of the two preceeding phases, and to prepare a final report based on the findings, with recommendations for a future course of action.

In the process of completing Phase I, nine individual studies were conducted to investigate specific aspects of the feasibility assessment, all of which are summarized in the Phase I report. These nine studies include the following:

1. Recommended Resource Management Guidelines
2. Institutional and Administrative Arrangements
3. Optional Visitor Use Concepts
4. Transportation Analysis
5. Tourism Development Plan
6. Socio-Economic Impact Study
7. Historical/Archaeological Concerns and Opportunities
8. Land Ownership Inventory
9. Analysis and Summary of Public Comments

Copies of the above reports are available upon request from the following addresses:

Department of Tourism,
Recreation and Heritage*
P.O. Box 12345
Fredericton, New Brunswick
E3B 5C3
Phone: (506) 453-2624

Parks Canada
10 Wellington Street
Hull, Quebec
K1A 1G1
Phone: (819) 994-2696

* Throughout this report the former title Tourism New Brunswick has been used. The correct title is now the Department of Tourism, Recreation and Heritage.

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EXECUTIVE SUMMARY

Heritage resources must be considered in the potential development of the National Marine Park concept for the West Isles study area. These extensive resources include over 2,500 years of Indian settlement and marine exploitation and over 250 years of French, New England and Loyalist settlement and fisheries establishments.

Much of this heritage resource is contained in archaeological sites which are both very fragile and nonrenewable. While much of the Park impact on them could be negative (i.e. increased site destruction due to increased use of the area), the incorporation of archaeological concerns and research into the proposed Park development could not only mitigate much of the adverse effects on the heritage resource, but provide something very positive to the whole Park concept, itself, in depicting the theme of man-sea relationship (i.e. historic fishing village, archaeological excavation of shell midden site).

Of course, very careful planning will determine which areas will be utilized as interpretation sites and which areas will be zoned to reflect the sensitivity and fragility of resources. Laws and regulations concerning access and safety would have to be enacted and strictly enforced in the Park and in the area immediately outside of the Park boundary. This is essential if the Park is to protect and preserve resources for the benefit and enjoyment of present and future generations.

INTRODUCTION

The area of the proposed National Marine Park encompasses the West Isles area which lies at the western entrance to the Bay of Fundy at the Maine-New Brunswick border (See Figure 1, Appendix A). This portion of New Brunswick is regionally known as the Fundy Isles. The West Isles, located in Charlotte County, New Brunswick, support approximately four percent of the provincial population. Most residents of the region are either directly or indirectly employed in the sea products industry. This is not surprising, as the area is rich in natural resources. The marine resources include a wide variety of marine flora and fauna, bird and mammal species. At the same time, the West Isles present a rich historic and cultural heritage which reflects the strong traditions of man's interactions with the sea.

This interaction between man and sea has existed for thousands of years. In fact, it is an absolute certainty that men stood on the shores of the Passamaquoddy Bay long before the birth of Jesus Christ. Shell midden sites in the area present evidence for such early occupations and indicate season of use, resources exploited, butchering/processing technology, and nutritional studies. Historic Indian villages and camping sites are known to exist in the proposed park area. Cellars and other ruins can be found which are indicative of French settlement. The most populous use of the West Isles was from the 1760's onward with New Englanders settling the area for trading and the rich fisheries, followed by Loyalist émigrés. From the beginning of time till present, the sea has dominated the past and has shaped the future of residents in this area.

1. PREHISTORY OF THE WEST ISLES AREA

Prior to 14,000 years ago, most of southwestern New Brunswick was covered by a thick sheet of ice and was therefore inaccessible to man. When the ice sheet retracted, a tundra-like environment developed in the area which persisted until 9500 B.P.. An "open spruce woodland" vegetation followed. Thus by 9500 B.P. a mixed spruce-hardwood (birch, aspen) forest vegetation existed. The entire northeast, south of the St. Lawrence River, was deglaciated and the first occupation was well established by 10,600 B.P. (Deal 1984:16).

Archaeological sites illustrative of the first occupation period are few, due mainly to erosion. One possible site, the Pirate Cove site, on Spednic Lake located on a piece of land between Pirate Stream and Pirate Cove in the St. Croix River basin, appears to have been completely washed away due to fluctuations in the water level of the lake (Deal 1984:18). As indicated by Spiess, Bourque and Cox, subsidence of the land surface along the whole Maine coast has submerged earlier coastlines, and presumably prehistoric coastal sites as well (Spiess, Bourque and Cox 1981:1). At the Partridge Island site (BgDr48), located within the proposed marine park area, twenty-five percent of the total remaining site area could be lost in the next five to ten years to coastal erosion (Bishop 1982:8). Recent estimates of submergence are as much as 9 mm per year in some areas of the Bay of Fundy.

The erosion rates though have changed over the millenium. During the time of the first occupation, the land of southwestern New Brunswick was probably covered with water to such an extent that as much as eighty or more miles of coastline would be inland today. Estimates vary but it reached bottom 8,000 - 6,000 years ago. Then the land surface started to submerge again. Hence the above rate of erosion, thirty

centimeters per century, is applicable only to the last few thousand years. Thus, as Black notes, virtually all of the shell middens sites (discussed below) located in the Quoddy region are subject to this erosion (Black 1984:2).

Shell Middens

Most of the archaeological research conducted in the study area and the subsequent data has been based on shell midden sites (see Figure 3, Appendix A). "The shell midden is indeed a wondrous storehouse of information awaiting our skills to interpret" (in Black 1983:166). Shell middens are largely concentrated in protected estuaries and sheltered bays with extensive inter-tidal habitat (Sanger 1982:197). More specifically they are usually found adjacent to the high water line on shores having low gradients and southerly exposures to wind and weather. In terms of location, Davis noted that shell deposits do not seem to be conducive to heavy forest growth (Davis 1978:10). However, recent studies by Black contradict this statement since the BgDq5 site at Bliss Islands was "covered by coniferous trees, and a relatively thick (ten centimeters) layer of peat soil" had formed over the shell deposit (Black 1984:27).

On the subject of size and composition, middens may vary in dimension from very small thin shell scatters to substantial deposits encompassing thousands of cubic meters. Some shell middens consist of oysters, but most are made up of soft shell clams. Hard shell clams, mussels, and other species are present in most middens in lesser numbers. Many shell middens display a wide range of species from forest, river, lake, inter-tidal marine, and subtidal marine habitats in the Quoddy region.

Some archaeologists distinguishing between primary and secondary refuse believe midden formation is a series of episodes in which living floors are located in one part of the

site and middens in another (Black 1983:11). Virtually all prehistoric middens in the Quoddy region exhibit both cultural stratigraphy (i.e. living floor features, pits, refuse piles) and a variety of structural components (bones, shells, firecracked rocks, etc.) (Black 1984:42). Sites which are not stratified are usually smaller, contain fewer structural components, and are difficult to place in cultural historical terms. The latter derive either from historic shellfishing or baiting, natural shore edge accumulations of marine shell, or from aboriginal shellfishing of a different type or intensity than that indicated by the stratified sites (Black 1984:42). The mechanics of dumping on the site itself however are not well known nor is the degree of artifact movement in middens (Black 1983:10).

Coastal shell middens in particular have an advantage over interior nonshell sites in terms of the preservation of perishable materials. Organic materials such as bone, antler, and teeth do not survive in the highly acidic soils of the interior sites; whereas at coastal middens this acidity is neutralized by calcium carbonate from shell deposits. Thus considerable information is lost at interior sites concerning organic tool industries, as well as data on native diet and the season of occupation (Deal 1984:32). Thus "shell, once it has reached a degree of accumulation, ensures that bone and shell added to the site will be preserved regardless of its origin." (Black 1983:11). While this is true, Black notes the necessity of distinguishing between natural and cultural inputs in such coastal sites. This has been recognized in the Passamaquoddy Bay case ever since Matthew postulated that the sea urchin remains in a site might have been introduced by birds (Matthew 1884:24). As Black points out many prehistoric shell middens in the Quoddy region contain historic artifacts. Research recognizing the presence and extent of historic disturbance in such sites is needed (Black 1984:40).

Nonetheless, shell middens constitute an excellent basis for testing hypotheses of subsistence, seasonality (discussed below) and date of occupation. In fact, radiocarbon dating shells is a means of evaluating the intactness of midden contexts. Furthermore, it has been suggested that the historic occupation middens can be distinguished from prehistoric shell middens by virtue of the low species variability in historic shell deposits (Black 1983:vi). Hence shells have contributed directly to seasonality investigations. (This is done by determining the seasonality of shellfish species). It is obvious then from this discussion that shell middens can provide many valuable insights into an area's past.

The Early-Middle-Late Archaic Period

This period, dating between 10,000 and 5000 B.P. in the Maine-Maritimes region is more poorly understood than the first occupation period. Shell middens of this period are rare and have contributed little to the understanding of this period. Nevertheless, analysis of the cultural materials from surveys and recent excavations within the lake area of the St. Croix waterway indicate that before 3,500 years ago this area was populated by Indian groups. Evidence for two cultural groups which archaeologists have termed Moorehead Archaic and Susquehenna Archaic has been located in the Spednic Lake area.

The coastal Archaic peoples of southwestern New Brunswick are considered to be one of many local variants of a broader based Maritime Archaic adaptation, which extended from the Kennebec drainage in present day Maine, through the Atlantic provinces, to northern Labrador (Deal 1984:22). Part of this Maritime Archaic adaptation is the Moorehead burial complex which originates as far back as the L'Anse Amour burial (dated to ca. 7500 B.P.). It was originally thought that this group was part of the Laurentian Archaic Tradition as proposed by

Sanger. However, a prominent aspect of the Maritime Archaic cultural system was the development of a burial tradition featuring the extensive use of red ochre and elaborate grave goods (see Deal 1984:26).

The Maritime Archaic peoples of the Maine-Maritimes area are viewed as having a varied hunting-gathering-fishing economy in which coastal, riverine and lacustrine resources all played a significant role (Deal 1984:25). Their interior sites tend to be located at strategic points on the larger river courses and the lower reaches of major tributaries, while coastal sites are found near the mouths of major rivers (Deal 1984:25). Faunal evidence indicates that offshore fishing of cod and swordfish were important summer activities at coastal sites. Swordfish and harbour seals may have been harpooned from large dugout canoes. A popular fall and winter pastime was probably the hunting of moose and caribou. Anadromous fish runs were likely harvested in the spring. Correspondingly then, shellfish was considered to be less important (Deal 1984:26).

A second Archaic peoples, the Susquehanna, appeared in the Maine-Maritimes region approximately 4,000 years ago. The Susquehanna are believed to be an actual migration of people from the Middle Atlantic coast area. Others contend that these people were assimilated by the indigenous Maritime Archaic peoples. A major distinguishing characteristic of the Susquehanna was that their woodworking technology was less elaborate than the Maritime Archaic peoples. As well, their general burial practice was cremation rather than the Maritime Archaic custom of interment. The Susquehanna are generally considered to be the technological innovators responsible for the transition toward the use of pottery (Deal 1984:28). This group of Archaic people were less marine oriented than the former Maritime Archaic or later ceramic occupations. Instead, emphasis was placed on deer/moose hunting, while inshore bird and marine mammal hunting and fishing were of lesser importance

(Deal 1984:31). To conclude, the Moorehead Archaic and Susquehanna Archaic traditions each displayed different patterns of resource utilization and seasonality of settlement.

The Last 2,500 Years - The Late (Ceramic) Period

The examination of this period has generated great controversy among archaeologists about the seasonality of the sites in the Passamaquoddy Bay region. The first report on excavations in this area was produced by Baird in 1881. Baird was the first to note the ubiquity of soft shell clams and the absence of hard shell clams in Passamaquoddy Bay sites (Black 1983:5). He also noted layers of sea urchin shell and contended that they "constituted a large portion of the food of the aborigines" (Deal 1983:5). A later study by Matthew of the Bocabec site suggested a year-round seasonality for the site but also stressed the evidence for winter seasonality (Deal 1983:5). According to Speak (1940), seasonal round activities included hunting and trapping in the interior during the winter and coastal settlements in the summer (Wherry 1981:3).

It was not until the 1960's that this area was subject to further study. Pearson's tests at St. Andrews emphasized the dominance of soft shell clams over those of other shellfish. His attempt to measure environmental changes with the use of the distribution of northern whelk was unsuccessful. Later, Sanger's major excavations in this region were analysed for seasonality by many researchers resulting in many different interpretations. Some believe that coastal sites represent late winter/early spring occupations, while others contend that the interior was exploited in winter and the coast during late spring and summer. However, Sanger himself has generally considered the Passamaquoddy Bay middens he excavated to represent late autumn/winter/spring seasonality during the period between about 2,000 years ago and 1,000 years ago. He suggested warm season occupations were represented by later

sites (in Black 1984:2). Furthermore, Sanger does not agree with the adoption of neatly dichotomized seasonal round models (Black 1983:8).

Early ethnographic accounts placed native people on the coast during the summer and winter in the interior. Evidence however, indicated late winter/early spring occupation not summer occupation on the coast. This evidence contradicted expectations based on traditional ethnographic reconstruction which put people inland during the winter hunting and trapping, and summer fishing and trading with Europeans. But this is not substantiated by faunal evidence. Although acidic conditions preclude most faunal analysis on inland sites, it is possible that natives wanted to exploit the summer inland fishery. Assuming a winter/coastal to summer/inland transhumance pattern in historic times, the early historic situation could be explained as an accommodation to the seasonal appearance of Europeans (Sanger 1982:196). However, this assumes that a transhumance pattern existed prehistorically. A rethinking of the nature of ethnographic records requires that caution must be exercised before making the above assumption (Sanger 1982:197). It is important to emphasize that research does not support the neatly dichotomized seasonal round postulated on the basis of ethnohistorical data (Sanger 1982:202). Others such as Wherry, agree and state that "the coastal summer-interior winter pattern of transhumance recorded by ethnographers is probably an artifact of the fur trade and is not a prehistoric cultural pattern" (Wherry 1981:3). Stewart also has argued for regional variability in seasonality using data from several maritime sites, and has cautioned against uncritical acceptance of ethnohistoric accounts (Wherry 1981:3).

Many of the above seasonality interpretations are not totally accurate. The problem with these interpretations is that most researchers concentrated their faunal analyses on

vertebrate remains (mammals and birds), while devoting little attention to fish remains. In fact, internal stratigraphy of the sites and intra-site variability have been virtually ignored by archaeologists with the exception of Black.

Black's study of Partridge Island excavations (discussed below) is based on a microstratigraphic approach to analysis of midden stratigraphy. Intra-site variability is evaluated in terms of faunal remains and uncarbonized plant remains, and other structural components. Components are treated in quantitative terms and stratigraphic distribution is weighted in relation to seasonality of faunal remains. Relative quantities, relative importance, and the seasonality aspect of marine shell species are also considered (Black 1983:14).

On the subject of seasonality, Black, concluded "it would be entirely possible for the aboriginal inhabitants of Passamaquoddy Bay to exploit both interior and coastal resources while maintaining coastal residences throughout the year" (Black 1983:160). There is no <u>apriori</u> reason to assume the presence of a coastal/interior dichotomy in settlement during the prehistoric period (Black 1983:160). Given the fact that some evidence is available for both winter and summer occupation it is possible that the settlement pattern in this area may be one of short-term occupations on the coast in most or all seasons (Black 1983:159). Naturally, it is assumed that during the warm season occupation would be more centered in the West Isles, while the north shore of Passamaquoddy would be frequented during colder weather. Thus a more recent hypothesis is that of a complicated picture of adaptation and seasonality reflecting multiple species exploitation and occupation ranging from short-term to year-round (Sanger 1982:194). It is obvious from this discussion of the various hypotheses of seasonality that further excavation and study in this area is necessary. Following are examples of coastal and interior camp and village sites in or near the study area which are illustrative of the discussion on seasonality.

Winter coastal village site A representative example of a winter coastal village site is that of Teacher's Cove. The Teacher's Cove site is located halfway between the towns of St. Andrews and St. George, New Brunswick, at the end of the Holts' Point Road. The site (BgDr11) extends along the beach for approximately one hundred meters and inland for sixty-five meters. Appearing fifteen meters beyond this are scattered pockets of midden. The site described above does not necessarily define the limits of occupation. As noted earlier, beach erosion is evident at most coastal sites on the Bay of Fundy and rising sea levels most probably have eroded this site (Davis 1978:9).

Excavations at the Teacher's Cove site uncovered two periods of occupation. The earlier occupation is characterized by the absence of ceramics and by two distinct tool types. One group of tools consisted of projectile points defined as having contracting stems. The other group of tools were formed unifaces, the largest found at the site. Davis notes that "these artifacts, when not disturbed, are found on or within a few centimeters of the marine clay which underlines the shell midden deposits of the ceramic-bearing occupation" (Davis 1978:29). It was also pointed out that the early occupation was limited to the northern portion of the site (Davis 1978:29). It is quite likely that these artifacts were made of felsite from Maine. This would correspond to evidence found at Moose Island, Maine by Kingsbury and Hadlock (Davis 1978:29). Likewise, a small site on St. Croix Island has produced early artifacts similar to those of the Teacher's Cove site. However, unlike other sites, the first group of projectiles at Teacher's Cove are not associated with either houses or ceramics. On the subject of resource utilization, evidence suggests that the early occupation located on the coast was aware of the potential resources but had not begun the maximum utilization of this environment.

The more recent occupation at Teacher's Cove is represented by expanding stemmed projectile points and small formed unifaces (Davis 1978:31). In comparison with the earlier occupation of the site the later occupation seems to be of longer duration. Artifacts such as house features and ceramics date this occupation in Sanger's "Late Period" for the prehistory of Passamaquoddy Bay (See Figure 2, Appendix A). (The best associated date for this period, taken from a pit within a house feature, at the Teacher's Cove site is 1,770 years before present.) The substantial house structures in particular, add support to the theory that the coast was not abandoned in the winter months, since house forms of the type from Teacher's Cove would probably provide adequate shelter for the winter months (Davis 1978:29). This is further substantiated by the faunal analysis from Teacher's Cove which shows winter species in the context of these houses (Davis 1978:29). However, it is noted that prior to European contact some eight or nine hundred years ago there was a shift in subsistence activities which resulted in the dual coastal-inland pattern. At this time, the semi-subterranean house form was no longer prevalent on the coast and the use of pottery was discontinued (Davis 1978:32).

As indicated above, this site has many archaeological resources including; unifaces, house features and ceramics. The most important conclusion derived from the distribution of these artifacts is that a great deal of manufacturing occurred within the house with little taking place in the midden regions (Davis 1978:8). "This, coupled with the preliminary study of the faunal remains suggest that the semi-subterranean house form may be associated with a practice of wintering on the coast" (Davis 1978:8).

Seasonal (spring, summer, fall) coastal campsite Partridge Island, one of the Islands in the study area is typical of seasonal coastal campsites. This island, lying north between Deer and Parker Islands has been the site of recent excavations (BgDr48, BgDr49) and subsequently many interesting discoveries. Since the majority of other excavation sites in the region were usually on mainland shores or very close to it so as to be accessible at low tide, it was con- sidered possible that an offshore island site might differ significantly from contemporaneous coastal sites. Variations in seasonality, artifacts, feature forms and faunal evidence could be possible.

However, Bishop's limited results from excavations on Partridge Island generally revealed cultural homogenity to mainland sites. Notable differences were: 1) the marked absence of notched projectile points, 2) the insignificant number of small unifacial scraping tools, 3) the absence of barbed or basally notched bone points in faunal tool kits and 4) the lack of drilled holes at the shoulders and collars of ceramics. It was not surprising to find that mammal remains were fewer on the island than at mainland sites. It was noted here that mussel and soft shell clams were of equal importance, whereas on mainland sites the soft shell clam is the primary midden constituent (Bishop 1982:83). Despite these variations, whether attributable to sample size or actual fact, the hypothesis of differing orientation to a resource base on island and mainland sites could not be clearly substantiated by Bishop.

Bishop, however, did discover two periods of utilization at the Partridge Island site. A tool kit containing a contracting stemmed point and possibly ceramics indicated occupation before 2000 B.P. Evidence pointed to short-term, seasonally restricted

settlement. The later occupation (2000 - 1500 B.P.) possessed a lithic tool kit containing large notched bifaces, unifacial flake tools and ground stone celts (Bishop 1982:86). Dentate stamped designs and cord wrapped stick motifs dominated ceramics. Beaver incisors, bone points and antler remains were made into tools. Terrestrial and marine hunting of mammals, collecting of shellfish and capture of birds were indicated in faunal remains. Seasonality tended towards fall and spring utilization of the site. Yet Bishop also states "the entire Bay region was well known by prehistoric peoples and widely exploited at all times during the known prehistoric sequence" (Bishop 1982:67). Bishop's results, however, do not necessarily reflect an accurate prehistoric picture of the area.

Black's analysis of the Partridge Island site presents an interesting interpretation of data. The distribution of vertebrate remains suggested that shell midden sites should be treated as a series of surfaces consisting of both living floors and shell dumps, rather than as alternating layers of shell midden and floor deposit (Black 1983:133). The distribution of vertebrate faunal remains points to the possibility that the Indians lived in semi-subterranean houses next to the treeline in the winter, and on the shoreward edge of the site in less substantial structures in the warm seasons (Black 1984:3). Black's study indicates three stratigraphically separable occupations, one associated with the grey seal, one associated with mammalian and avian remains and one associated with cod and herring remains. Atlantic cod are interpreted as a summer/autumn seasonal indicator while general biological literature usually emphasizes spring/summer seasonality for herring (Black 1983:149). The grey seal is generally considered by archaeologists to be a winter seasonal indicator although somewhat unreliable.

Perhaps one of the most important conclusions of Black's study with respect to aboriginal subsistence, is his suggestion that the importance of soft shell clams relative to other invertebrate prey species may have been over emphasized in previous midden studies in the area. Correspondingly, evidence is presented which shows that varied shellfishing was carried on during both summer and winter seasons (Black 1983:v). The wide diversity of shellfish found at the Partridge Island site suggested to Black "that the Indians were not interested in the abundance of particular species (i.e. the soft shell clam) but rather in general littoral productivity, in deciding upon habitation site (Black 1984:3). The inhabitants of the Partridge Island site seemed to have different practices of selectivity toward different invertebrate species. It appears that only the largest horse mussel and common mussel species were exploited, while soft shell clams and sea urchins of all sizes were gathered (Black 1983:99). Data is presented linking sea urchin exploitation to fall/winter site seasonality, while other species are connected to summer site seasonality (Black 1983:144-5). To conclude the seasonality indicators at this site support Sanger's theory that summer occupations would be present in the ceramic period sites in the West Isles. As Black acknowledges evidence exists to suggest a possible transition over the years from summer/autumn to autumn/winter/ spring seasons of occupations.

The studies by Bishop and Black are valuable in that they demonstrate the need for further research and exploration to clarify the issues of seasonality and subsistence in the Passamaquoddy region.

Summer interior campsites The summer interior campsite at the Diggity site, located on the St. Croix waterway, is considered an example of ceramic period occupation in the interior of southwestern New Brunswick. In comparison to coastal sites, the number of interior sites that have been excavated has been few. As noted earlier in the discussion of shell middens, organic materials, such as faunal remains, do not survive the acidic soils of interior sites. Thus to reiterate, considerable information is lost at interior sites concerning organic tool industries as well as data on native diet and the season of occupation at the sites (Deal 1984:32).

Despite the fact that much information is lost and that only stone and ceramic artifacts are recoverable from such sites, Deal wisely points out that variations within these industries at interior and coastal sites provide valuable information on environmental adaptation. Information from the site indicates no examples of the distinctive cord-wrapped stick designed pottery which is characteristic of the later ceramic period (Deal 1984:33). However, small projectile points (parallel stemmed, side-notched and corner-notched) and pottery decorated with punctate and pseudo-scallop designs suggests an early ceramic period occupation. A charcoal sample from a hearth feature yielded a date of approximately 1220 B.P. (see Figure 2, Appendix A). It was discovered that the chipped and ground stone, and pottery assemblages from coastal sites are comparable to those of interior sites (Deal 1984:33). Bone and antler artifacts (including projectile points, needles, fleshing tools and harpoons) are common to coastal sites and were also probably utilized at interior sites (Deal 1984:33). Evidence of ceramic period dwellings have been discovered at coastal sites but unfortunately no interior sites have revealed such information.

On the subject of seasonality, Sanger has suggested that interior sites may have functioned primarily as summer fishing stations for the exploitation of anadromous fish (Deal 1984:35). Studies of charred seeds from the Diggity site point to possible summer to early fall occupation. In fact "all of the botanical evidence is consistent with Sanger's suggestion that the interior sites were primarily summer occupations" (Deal 1984:36).

Conclusion

The prehistory of the area of the proposed National Marine Park is an exciting period of study which, as indicated above, needs further research. However, in order to facilitate this research an attempt must be made to protect these and other heritage resources which are outlined on the pages which follow.

2. HISTORIC INDIAN PERIOD: PASSAMAQUODDY TRIBE

As previously discussed, Indians have inhabited the areas along the St. Croix River and within the Passamaquoddy region in general for thousands of years. However, historic literature to document the more recent historic inhabitation and the specific locations of this habitation is very limited. Diaries and fieldbooks, such as those of Captain Owen, William Pote and Samuel de Champlain quoted below, make references to the Indians but give their localities only passing mention. As James Wherry commented "the feeling seems to exude to the researcher in reading these accounts that Indians were such a common denominator, that to the authors, further mention seemed unnecessary" (Wherry 1981:1). In order to appreciate the historic resources of Indian inhabitation sites within the Passamaquoddy territory, a brief summary of this information is presented.

The West Isles area was frequented prior to European settlement by the Passamaquoddy tribe of the Eastern Algonkian speakers. The name Passamaquoddy is said to be the translation of the Indian term "Peskutan-Akadi ("pollock-plenty-place") (Barto 1975:1). Another author however contends that the term is derived from Peskamaquontik and that from Peskadaminkkanti meaning "it goes up into the open field" (Lormier 1876:14).

The Passamaquoddies had dispersed settlement pattern and an economy based on hunting, gathering and most importantly fishing, where and when resources dictated. In the spring attention was turned to anadromous fish runs, making maple syrup, gathering birds' eggs and fresh greens. The Indians in the summer captured waterfowl, hunted seal, fished pollock and gathered shellfish (including oysters, scallops, clams and lobsters). Much of the latter was dried for winter use. In the fall months preparations were made for the long cold period ahead.

Shelter and food were prerequisites for winter survival. Wigwams were constructed with a framework of poles set in the earth and covered with reed mats and birch bark. An opening was left in the top for smoke from fire in the hearth below to escape. The floor of the wigwam consisted of fir boughs and animal skins (Barto 1975:5). The wigwam was a practical shelter for the Indians as they could easily pack up their belongings and move on to their next destination leaving the readily available wigwam frame behind. As noted earlier, often the food gathered in the summer and fall were preserved for winter. Pollock and shellfish were dried and stored. Meat and fish, after being either smoked or dried, was buried. Once shelter was built and food conserved, men and women concentrated on their respective activities. Men hunted and trapped animals while women cured meat and made garments from skins.

The Indians' skillful hunting and fishing activities were aided with tools made from what nature provided. For example, moose call horns were made of birch bark, and snares were made of thin strips of rawhide. Nets were fashioned from rushes finely woven together. An illustrative account in William Pote's journal describes a fishing expedition utilizing what was readily available:

> "...thrashing in ye water to hinder ye fish from coming out of ye cove, ye others built a ware across ye entrance of ye cove with bushes and our blankets, etc. and we caught in this cove fifty four salmon (Barto 1975:4).

Another journal, that of Captain William Owen, recounted how the Indians annually captured sea fowl. The sea fowl without their pinion feathers were forced into a large pond or lagoon. At low tide the birds were driven into a creek where an awaiting ambush bludgeoned the fowl. One such expedition claimed seven hundred fowl (Barto 1975:5).

Of the many animals hunted by the Indians, including the hare, porcupine, beaver, deer, bear and seal, none was as important for a variety of purposes as the moose (Barto 1975:5). In addition to the use of its meat, bones and fat for food, the hide was used for clothing, moccasins and straps for snowshoes, toboggans and canoes. Tools, fish hooks and needles were made from splintered bones. Even the hair was utilized once it was spun into yarn.

Other implements were also fashioned from what was readily available. Tools such as axes, spears and knives were made from stone; harpoons, needles and awls were crafted from bone. One of the Indians' most notable creations was the birch bark canoe. The canoe allowed them to move about quickly and navigate the often dangerous waters of this province with ease. It also enabled them to pursue offshore fishing, as well as trade up and down the coast.

As indicated above, the Indians lived on the islands and along the shores of the Quoddy region. Samuel de Champlain of the Sieur de Monts expedition was most probably the first white man to encounter Indians in this area. Champlain's account of his settlement at St. Croix made reference to Indians in the area but not to their specific locale. Evidence (see Ganong 1983: 50-54, Wherry 1981:5) suggests that Indian settlements existed not only at the Demonts/Champlain settlement but at Sand Point as well (Wherry 1981:5). An additional settlement,

a fishing station, at the falls near Milltown, New Brunswick was identified from Champlain's Works (Wherry 1981:5-8). Wherry infers that Milltown may have been as important to the Passamaquoddies as Meductic was to the Maliseets. An article in the Saint Croix Courier highlighting a brief by Joseph Williamson to the Maine Historical Society indicates that Scoodic Reserve at Milltown was a burial ground for the Passamaquoddy Indians. Ganong concurs with the identification of this site (see Ganong 1983:65-66, 170).

Despite the concurrence on the identification of Milltown as an Indian site, its importance has been a point of contention. Erickson, Mitchell and Ganong contend that the main Passamaquoddy village was at St. Andrews during the eighteenth century. During the influx of settlers, Indian Island and then Pleasant Point became the chief villages (Wherry 1981:8-10). It is possible that the Indians moved from the village at Milltown to St. Andrews sometime after 1704 but before 1764 (Ganong 1983:65-66). Indeed it is quite probable as Wherry suggests, that each of the above sites were contemporaneous and presented a differing seasonal strategy for the Passamaquoddy Indians.

The above information, particularly the accounts from William Pote and Captain Owen, indicate that with the settlement of this region by Europeans, Loyalists and others, the Indians increasingly had contact with the culture of the white man. In the nineteenth century the Passamaquoddy Indians seemed to decrease in numbers and gradually moved to towns such as St. Andrews. For a list of the known Indian villages and camping grounds and their routes of travel in New Brunswick see reproductions of Ganong's maps (Figure 4 and Figure 5, Appendix A).

3. HISTORICAL PERIOD: EUROPEANS

It is obvious from the material presented here that the study area for the proposed National Marine Park in the West Isles, Charlotte County, New Brunswick is a region of Canada that has tremendous heritage resources. This can be concluded before reviewing the archaeological resources of the most familiar part of this area's past, namely the European historical period (See Figure 6, Appendix A). It must be remembered that much valuable evidence and data can be lost as this information is contained in perishable materials and alterable localities (Ganong 1983:3). Recognition and protection must be given to such areas before "the events are long past, and their sites have had time to be obscured by forgetfulness, misplaced by the vagaries of tradition, or hidden by topographical or other changes" (Ganong 1983:2). It is critical that potential archaeological sites are preserved for the use of the many whom it does and will interest in the future. While it is essential for our purposes to identify the particular sites of cultural and historic interest, it is also necessary to briefly summarize the history of this region. No attempt is made to provide a detailed account of the history in this area as this task has been ably completed by others (see New Brunswick History Checklist for a list of references). The following is an outline of the historical period of this region noting the areas of settlement, livelihood and activities of the settlers and the seasonality of those activities.

Exploration Period

Records indicate that the West Isles and the Bay of Fundy area in general was discovered and explored by Samuel de Champlain, pilot of the ill-fated Sieur de Monts expedition. In 1604 Champlain and De Monts passed through the Letite

Passage en route to St. Croix. Several islands mentioned in Champlain's narrative of his voyage correspond to some areas in the proposed National Marine Park, i.e. Thumb Cap, Partridge Island, Shag Rocks, The Wolves, White Horse Island, McMaster Island, White Head Island and Head Harbour of Campobello Island (Ganong 1983:50; Barto 1975:15).

The account of this first fateful winter in the New World on St. Croix Island offers some insight as to the conditions of the settlement of that time. St. Croix Island or Dochet Island, as it was also known, had a great number of birds and abounded with codfish, salmon, bass, herring and halibut. Its other favourable characteristics included; land covered with firs, birches, maples and oaks, its location, and finally its good soil (Ganong 1983:15). Yet during their dreadful winter, Champlain recorded that there were no springs or brooks and that it was not possible to go to the mainland because of the great pieces of ice drifted by the tide. Work and rest were difficult as there was an insufficiency of fuel (Barto 1975:18; see also Ganong 1983:18-19). The DeMonts and Champlain settlement (see Figure 7, Appendix A) was abandonned in 1605 with the remaining settlers moving to Port Royal, Nova Scotia. Soon after their departure the British burned the remains of the DeMonts and Champlain encampment (Barto 1975:18). However, the U.S. Department of Interiors' archaeological excavations of Champlain's settlement on St. Croix Island revealed the graves of members of Sieur de Monts expedition who were struck down by scurvy.

The Acadian Period

During the one hundred year period following the 1604 Demonts expedition, the Passamaquoddy was not settled to any great extent. Despite the many seignioral grants made in New Brunswick (see Figure 8 and Figure 9, Appendix A) beginning with the grant of 1632 of Saint Croix (St. Croix) to M. le Commander de Razilly, few were settled upon except St. Aubin,

Chartier, and Meusnier. Records indicate that no settlers were present in this region until 1684. At this time, Jean Sarreau, Sieur de St. Aubin, was granted a seignory at Passamaquoddy. Here he established a small settlement on the St. Croix (surrounding his house with a palisade) from which he engaged in fishing. Census records for the year 1686 recorded two families settled at St. Croix. A later census, that of 1689, listed that the following were in existence at that time: twenty one whites, forty Indians, five houses, ten wigwams, ten cattle, forty guns, three swords, and twelve acres of upland under cultivation (Barto 1975:20). Raids on Acadia (see Nowlan 1975:11) reduced the 1693 census numbers to three adults and four children (Nowlan 1975:11). Another census, that of 1700 indicated sixteen persons were living in the region.

Accounts of the above noted raids, one of which is described here, provide information on French settlements in the area. In 1704, when Colonel Benjamin Church organized a retaliatory attack on the Indians of Indian Island, the settlers seemed to have been more numerous but after this date they seem to have disappeared from the region (Ganong 1983:53,92). Church is recorded as coming up the westward passage of Passamaquoddy to Indian Island (or Latreille Island as it was earlier called) where he met a French family named LaTreille. Maps from that time (see Figure 4, Appendix A) indicate that this family was settled at the southern end of Indian Island. Church also proceeded to Pleasant Point (or possibly St. Andrews) where he found what is believed to be Jean Sarreau, Sieur de St. Aubin, settlement. Continuing at the head of the river near the falls (probably St. Stephen) he discovered the settlement of Chartier. Other maps put French settlements on the mainland at Chebaiaok (part of Maine) and at St. George and on Campobello Island near Harbour Delute.

Evidence, such as cellars and other ruins, indicates French settlement at the above mentioned areas and others. "Tradition points to certain cellars on the peninsula between Curry's Cove and Otter Cove (Campobello) as French, and it was probably here the French houses really stood" (Ganong 1983:54). As well, at the entrance to Harbour Delute, westward of Curry's Cove, a picture of Windmill Point dated 1777, shows an arch ruin which could conceivably have belonged to an important building, and possibly a site of another settlement (Ganong 1983:95). Morris noted that at "at the point on the west side of Scoodic River called Point Pleasant ... the French had a fort, and part of the ditches and ramparts still appear" (Ganong 1983:56). It is very probable that this was the dwelling of St. Aubin. Some old cellars at Hills Point between Oak Bay and the Waweig as well as graves and a well at Letite are said to be French too (Ganong 1983:56).

To summarize, it would appear that large French settlements were on St. Croix Island, small settlements at Indian Island, Campobello Island, St. Andrews, Pleasant Point, St. Stephen and other points (see Ganong 1983:56). As Ganong wisely points out, it must be remembered that the censuses indicated that the French population of this region was always extremely small. Also, it is not surprising that this population at Passamaquoddy were less farmers than fishermen and traders (see Ganong 1983:56).

European Settlement

European settlement of the study area was delayed due to the unsettled state of affairs at this time. It was not safe for the Europeans (particularly the British) to settle in the Passamaquoddy during the Colonial Wars 1689-1763 between England and France, especially as the French had unusual influence over the Indians. The Treaty of Utrecht in 1713

transferred Acadia to England but no attempt was made by the English to settle the area until after the capture of Fort Beauséjour (Fort Cumberland) and the expulsion of the Acadians. In the early 1760's the area was considered safe for settlement.

Thus it was during this time that previously migratory traders and fishermen from New England began to settle at Passamaquoddy. Initially, a few men came to the area only to fish and trade with the Indians. In 1760 Alexander Nichels made his first trip and continued to return annually for each season for a two month or longer period. Others (including Alexander Hodges, James Parsons and John Frost) settled at Pleasant Point to fish and trade furs with the Indians. Two enterprising settlers, James Simonds and William Hazen, from New England formed the Canada Company and created a small fishing and trading post on Indian Island.

The European period was marked by an attempt to settle the province with a series of immense land grants to officers of the Royal Service and others (see Figure 10, Appendix A). The largest land grant was that of Campobello Island given to Captain William Owen and his family in 1767. Three years later, Owen arrived from England with thirty-eight settlers and established the settlement of New Warrington on Campobello, the most important of the pre-Loyalist settlements in this district. The island stayed in the possession of the Owen family until 1881. Another settlement on Campobello Island was that of Robert Wilson and others at Windmill Point, Wilson's Beach in 1766.

As noted earlier, another area of European settlement was on Indian Island. It became an important trading post due to thriving businesses operated its settler James Boyd and others. Simonds and Hazen's (and White) trading posts of 1763-1770 was probably located at the south of Indian Island on Marvel Island (now known as Marble Island) (Ganong 1983:111).

James Chaffey and his heirs carried on extensive trading, fishing and shipping business on this island. The Chaffey enterprise had strong commercial links and sea routes to and from England, the United States and the West Indies. Much evidence in various forms (early residences, ships' logs, etcetera) still remain on the island. Another early resident of Indian Island was James Fountain who, in 1777, moved to Fountain's Cove (now Cummings Cove) becoming probably the first permanent resident of Deer Island.

At this time, Deer Island was settled by Captain Ferrell. He established himself at Chocolate Cove and others soon followed. In 1770, Farrell bought the Island from Colonel Gorham who was granted the island originally but never took possession of it. Farrell's casual attitude as a landlord and his frequent absences resulted in many conflicts, many of which were not resolved until after his death in 1823.

Other settlements in the area were at St. Stephen, St. Andrews, Digdeguash and Grand Manan (see Figure 10, Appendix A). Pleasant Point has the distinction of being probably the earliest permanent English settlement in the area (Ganong 1983:111).

The Loyalist Period

Following the period of European settlement, thousands of people, during and after the American revolution, flocked to the Maritime area. In fact, the entire coastline and major islands of Passamaquoddy were being settled as a direct result of the Revolution. Many Loyalists from disbanded regiments and other associations were forced to find new homes as they were not allowed to remain in their old ones. Problems arose because there were many pre-Loyalist grants in Charlotte County and some grantees had made no effort to fulfil the conditions

of the grants. This caused much uncertainty about land grants. Many Loyalists were dissatisfied with their lots and either abandoned them or sold them. Often these lands were then redistributed (see Figure 11, Appendix A).

Nevertheless, former officers, soldiers and civilians settled in the area. The first Loyalists to settle in the Passamaquoddy Bay were members of The Penobscot Association from Castine, Maine in 1783 at St. Andrews. Some members of the disbanded 74th Association of Argyll Highlanders settled on Campobello Island. The population also grew on Indian Island thanks to the Loyalists. Many Loyalists by the end of the revolution would also find their way to Deer Island. The General Return of November 25, 1785 which recorded the number of all disbanded troops and Loyalists settled in the Passamaquoddy area receiving Royal Bounty of Provisions stated that the number of persons in this category was 1940.

Post Loyalist, Confederation, Post Confederation Periods

The dividing line between the Loyalist period and the Post-Loyalist period is not distinct as one period merged almost without a break into the other. Yet one distinguishing characteristic of these years was the extensive immigration from the "Old World". Another item of interest in the post-Loyalist period was the construction of blockhouses and batteries at such places as St. Andrews and Partridge Island near Saint John. These and other defense works were constructed in the province after 1800 and especially during the war of 1812. While on the topic of defense, one must note one of the more colourful aspects of the West Isles pre-confederation history, namely the Fenian raids of 1866 on Indian Island (see Nowlan 1975:86).

After Confederation, the West Isles and especially Campobello Island gained much attention. It was during this period that Campobello Island became "The Queen of Summer Resorts" (Nowlan 1975:89). The Campobello Company (then a group of Americans) were marketing the area with its soothing climate as a haven from the hustle and bustle of American cities. Three new hotels were opened - the Owen (constructed near the site of Admiral Owen's house), the Tyn-y-Coed and the Tyn-y-Maes. One of the Island's most prominent visitors were James and Sara Delano Roosevelt and their son Franklin who first visited Campobello in 1883 and made regular visits thereafter. Many Americans made this area their summer retreat and continue to do so today.

Since the first settlement in this area by Indians, followed by the Champlain expedition and even later by the Loyalists, to the communities of today, individuals have adapted to their environment utilizing a variety of its resources. In the chapter which follows the various uses of area resources and subsequent industries which have sprung up over the years are briefly examined.

4. RESOURCE USE

The environment and climate of the Passamaquoddy Bay area were not only its selling points to tourists (as noted above) but were critical in the shaping of its inhabitants, their past and future. The assets of sheltered harbours, waters abounding in fish and great stands of pine, oak and chestnut all combined created industries of lumbering, shipbuilding, trading and fishing from which everyone either directly or indirectly derived their livelihood (Barto 1975:34).

Land Based Activities

Land based activities included wood related industries, farming, mining and other activities. During the early settlement period, women and children filled their days by preparing meals (usually consisting of readily available foods such as fish, berries, wild meat, and garden crops of beans, corn and potatoes); preserving food for winter (either by smoking or with salt); making candles and soap, spinning, weaving, sewing and washing clothes; and tending the garden. Males of all ages were occupied with providing meat and fish for the table and wood for construction and fuel.

Wood based industries Wood was always an invaluable resource and was used as a basis in virtually everything from industry to daily necessities. One and two room houses with sleeping lofts were constructed of logs caulked of mud. Large fireplaces in which logs burned provided heat for comfort and heat for cooking. (In warmer weather baking was often done in outside ovens). Tables, benches and beds were made from planks of wood. Chairs were cut from barrels. Children's toys,

spinning wheels, looms, washtubs, bowls and utensils were crafted from wood. Larger equipment, such as ploughs and rakes, was handmade from local timber as well (Barto 1975:34).

As winter approached men went into the woods and cut timber. This activity was increasingly important as the demand for timber accelerated at home and abroad. It was reported as early as 1784, that in Passamaquoddy eight sawmills were operating, and by summer every stream would be adapted for a sawmill and have one erected upon it (Barto 1975:36). Wilson's Beach, Campobello Island, was the site of Robert Wilson's lumber company. His neighbour, John Curry, a shipowner, was also a lumber merchant. At Cummings Cove and Richardson, Deer Island, shipbuilding was a thriving industry. The shipyards were respected for one hundred years for the fine quality of their boats (Barto 1975:92). The lumber and shipbuilding industries however experienced a decline in demand with the introduction of the steam engine.

Farming Although it would seem that shipbuilding and fishing would be the dominant activities, farming was also important in the West Isles. An 1861 West Isles census (Barto 1975:86) occupational category lists the number of farmers as 196 and fishermen as 144. The 196 farms had a cash value of $89,001. Farming declined with the increased importance of the fishery and the processing industry. "The sole manifestation of what was relatively extensive farming in the West Isles during the last century are open fields on Deer Island which today are gradually being over grown" (Hardie and Jennings 1981:53).

Mining Mining, although an intricate part of the history of the area, has never been a major factor in the area's economy. Adams Island has been the site of some exploration during 1869 and again during 1929-1933. In 1944 no further work was done but in 1964 the island was re-explored. Evidence of this activity is still visible in the form of the headstock of one of the shafts sunk in the 1929-1933 mining period. Hardwood Island was subject to exploration in 1869 but no mining was carried out. Exploratory work was completed on Simpson Island in 1929 and 1963 with similar results. Two Deer Island residents, Lord and Dakin had more positive results as they removed some sixty to seventy bushels of grey copper carbonate from a near shore exposure (Hardie and Jennings 1981:55).

Although water based activities as discussed below were and still are of primary importance, land based activities played an important role in the more diversified economy of the past. It was with the advent of fish processing that land based activities lost much of their importance to the economy.

Water Based Activities

Water based activities include fishing (particularly weir fishing), travel and trade.

Fishing This is the most important activity in the West Isles area. In fact, the West Isles largest source of employment and income is from commercial fishing (Hardie and Jennings 1981:88). "It is not only vital to the overall economy of the region but also it offers considerable opportunity to interpret man's interrelationship with the sea"

(Hardie and Jennings 1981:42). It must be remembered that it is the herring and associated weir fishery that has been dominant throughout the history of the West Isles (Hardie and Jennings 1981:13). Other important fisheries in the area include ground fish (i.e. pollock, cod, hake) and lobster (see Appendix B, C and D). These historic marine resources in the West Isles are recognized as important elements in a marine park concept. Thus, as noted above, the fisheries in this region, particularly the weir fishery, are considered to be activities which are culturally significant, especially in portraying to the park visitor the traditional relationships between man and the sea (Hardie and Jennings 1981:88).

The chief fishing grounds for the above mentioned species, near the entrance to the bay, and in the vicinity of the islands of Grand Manan, Campobello and the West Isles have been well known for centuries (see Figure 9). Fishing, in this area, is by far the oldest if not the most important industry. For instance, as early as 1763, James Simonds and William Hazen had set up a small fishing and trading post at Passamaquoddy on Indian Island. They employed small sloops and two schooners from April to October to take large quantities of cod and pollack (Davis 1978:33). "The value of the fishery rivalled the fur tade during the first ten years of the company's affairs..." (Campbell 1968:63). Fishing was valuable and more reliable when the fur trade was poor and troublesome. "Fishing was vitally important to the company because it provided one basic trade commodity, and although the fur trade proved to be more profitable, a New Englander would never abandon the fish trade" (Campbell 1968:63). Another case in point is that of settler James Boyd who was also setting up his operation the same year as Simonds and Hazen were establishing their trade post. By 1767, Boyd had erected several buildings on the Island as well as flakes for carrying on a fishery (Davis 1978:34).

Later during the 1820's and to date, herring, pollock, cod, hake and haddock were abundant (Davis 1978:170). Most of the fish catch was salted or cured and sent to the United States or to the West Indies. Inshore fisheries were important but by the twenties some fishermen were going as far as Labrador and Cape Sable to fish (Davis 1978:170). Even some whaling was carried out in the 1830's and 1840's. Moses Perley, in 1850, found that the settlers of Indian Island, Deer Island, and most of the smaller islands were nearly all fishermen. The situation was similar on Campobello Island as Campobello's fisheries were also excellent. In fact, at Welshpool, a fish fair was held annually at the close of summer and autumn fishing. Competitors from the islands, mainland Canada and United States were present exhibiting their fishing skills (Lormier 1876:103). Thus the entire West Isles area was well known to many for its excellent fisheries for many years.

As noted earlier, the herring fishery is a vital part of this area's history. For this reason, emphasis will be placed on the weir fishery while other methods employed over the years to catch this species are outlined in Appendix B.

<u>Weir fishing</u> This is the most common way of catching herring. It is believed the weir fishery dates back to the Indians who occupied this region many years ago. However the Indian techniques of weir fishing and other types of fishing (i.e. porpoise) are not well documented and need further study. It is believed though that early settlers of the area practiced weir fishing in the same manner as the Indians of that time. Weirs were constructed with stakes driven into the ground and interwoven with twigs and brushwood. The brush consisted of small birch trees which were nailed to the ribbands top down so that they formed a finely woven enclosure (McPhee 1963:51).

Weirs were placed on the shores of the Islands and along the coast (McPhee 1963:49). In 1850, twenty-one weirs were reported off Campobello (Nowlan 1975:67). In fact, some fishermen and their families moved out to the islands and set up camp in the summertime in order to tend to weirs. At present, the Bliss Islands, for example, are settled seasonally during the spring, summer and fall by fishermen from the mainland. These fishermen participate in weir fishing as well as picking periwinkles and off-shore ground fishing (Black 1984:10). Similarly, in the past the smaller islands of Bar Island and Spectacle Island were occupied by fishermen (Barto 1975:62). Dwellings were constructed and fish flakes for curing fish were erected. Today fishermen still live in small cabins or "camps" located along sheltered shores (Black 1984:10) just as they did many years ago. The reason for this is that areas suitable for weirs were limited. Not only was it necessary for the ocean floor not to be rocky, it was also mandatory to follow restrictions outlined in government regulations (see Fishery Laws and Regulations for New Brunswick).

Weirs were highly valued and an individual who took out a license for a weir privilege rarely allowed his privilege to lapse. A licence was invalid if the weir was not built for two consecutive years (McPhee 1963:42). In such instances the area was open to a new applicant. "Weir privileges have been distributed since the 1800's and, as few people allowed their privileges to lapse, few sites were available" (McPhee 1963:42). Weirs were regarded as valuable family possessions which were passed on as part of the family inheritance. However some weir privileges or shares thereof became available after a poor herring season. This is still true today.

It was and remains a commmon practice to divide weir privileges into shares and form a company. The number of shares and men would vary from one to eight. This way the capital investment per individual would be low. One of the men, designated as weir boss, was responsible for locating markets and paying bills. The other men would build and tend the weir. Weir owners (those who own shares) may engage in the actual operation or hire men to tend the weirs. Each fall the twine was taken off the weir leaving the stakes and ribbands to the elements of nature.

Once herring was removed from the weir, it had to be cleaned and cured either by pickling or smoking. The mode of cleaning and curing herring at Campobello Island and the West Isles involved various steps. After herring were dipped from the weir they were put into a large closely sealed boat. Once on the boats, men worked their legs back and forth removing the scales from the fish. Fish were washed in dip-nets and then salted. If herring were large and fat, a bushel and a half of salt per hogshead of fish was used; this was reduced to one bushel if the herring were small. Depending upon the size of the herring they may have laid in the salt from eighteen to thirty-six hours at cool temperatures. After the herring were sufficiently salted, they were strung on sticks (three to four inches in length), then rinsed in water and hung in the smoke house. The smoke houses were approximately twenty-four by thirty and located near the weir (Perley 1952:110). The cooler smoke of hardwood was considered best for smoking. Smoking herring was generally a family effort; women and children strung the herring while the men scaled the fish and performed the heavier tasks. Today, herring are smoked in a similar manner. Barrelled herring, also popular, were put up in the usual manner that was by "striking" and later repacking in barrels, either with Liverpool or Turk's Island salt. On Deer Island, herring were gibbed, washed and then salted for four

days. When taken out of its pickle, the fish were then packed on their backs in barrels. Smaller herrings were generally cured by smoking as described above.

The herring, smoked or pickled, were exported to the United States and the West Indies or sold as sardines to packers on the mainland. Originally, smoked herring was consumed or bartered in exchange for provisions. Smaller herring were used for bait or fertilizer. Markets and demand for herring were unstable and produced fierce competition between weir companies. The prices paid to fishermen for herring has varied widely in the past. In recent years the price has stabilized somewhat.

Weir fishing has changed little over the years. Although motorized boats have removed the necessity for fishermen to move to outer islands in the summertime to tend to weirs, many fishermen still continue this practice. Government regulations specify that weirs must be one thousand feet apart. Claims to weir sites are on a "first come first served" basis. Today individuals still must have a privilege or license to weir fish. Licenses or privileges must be inherited, bought or transferred as they are no longer issued. People still form companies usually consisting of three or four people. An individual may be hired to build the wier. In return, that individual may receive a share or a portion of the catch.

Of course, today's weirs are no longer made from brush, and twine has long been used instead. Twine naturally costs more but it is more durable and allows weirs to be shut-off periodically till market conditions are more favourable. It also allows seining to be done during daylight hours. When brush weirs were used herring could escape through the brush at higher tides. This necessitated seining before daylight (McPhee 1963:51). Today, when building a weir it is still necessary to test the suitability of the ocean floor. This is

done with the use of a long pole. In water at depths of thirty to sixty feet at low tide, stakes forty feet long made from jackpine (or steel) are driven into the ocean floor. The bottom twine of the fish netting is tied by a diver to a stake above the low water mark. The top twine is tied to the top of the stake. Thin poles called "top-poles" are tied to the stakes to ensure the weir's visibility at high tide. The structure is construed in the shape of the figure "6". Halfway through the season the netting on the weir is changed.

Emptying the weir is now a process which utilizes some modern technology. The fish, mostly herring, are taken from the weirs during low tide. A weir is seined by a crew of six to eight men using a lobster boat equiped with a modern device called a pumper (see Appendix B), a purse-seine net (see Appendix B), and a number of dinghies. Weirs are constructed large enough to accommodate three boats. In small boats, the men spread out a large purse-seine net around the circumference of the weir. As the net is hauled out of the water it is pulled shut by a draw string. Once sufficiently out of the water the pumper boat and the carrier (see Appendix B) enter the weir. Parallel to the dinghies, the pumper boat man fastens half the net to his boat. An hydraulic pump scales and pumps the fish into the carrier.

The season for such activities is dependent on certain variables. The season usually lasts five to six months (May to December) but is entirely dependent on the weather and herring stock. Small herring from weirs are used for sardines while bigger herring are either smoked or filleted. If markets are poor, herring may be held in nets till markets improve or may be used as bait. At the end of the season, as in years past, netting is removed from the weir while the stakes are left to the weather.

Travel Those individuals involved in fishing and trading were, by virtue of their profession, required to travel the oceans. The males, many of which were barely teenagers, had to suffer the tremendous hardships of the sea. The compass, sextant, chart and parallel rules were their only tools. Later, lighthouses were erected at strategic locations and equipped with oil lanterns. The first lighthouse erected on Campobello Island was at Head Harbour Island in 1871 and William Cline was its keeper. A lighthouse was also constructed at Mascabin Point. These were invaluable assets to seamen, especially during foggy or stormy nights.

Trade Ocean traffic increased with the booming trade, first beginning with the Indians and progressing to the fish and fur trade activities of James Boyd and others, especially the international Chaffey trading empire. While Indian Island was the centre of trading in this area, Deer Island was also involved in shipping and commercial activities. Smuggling (particularly rum running) during the 1870's and 1920's was also a popular activity (see Nowlan 1975:80).

Resources used by settlers of this area over the years resulted in a variety of land based activities, and water based activities. These activities have left a legacy of heritage resources which are outlined in the next chapter.

5. KNOWN HERITAGE RESOURCES

From the following discussion, it will be obvious that the study area for the proposed national marine park is rich with heritage resources (see Figures 5 and 6, Appendix A). Shell midden sites, historic settlements (trading posts, shipbuilding yards and lumber mills), shipwrecks, abandoned mines and an historic fishery combined with a marine seascape make the West Isles an area of considerable (pre)historic interest. The following is a brief look at the study area's heritage resources.

i) Drowned Occupation Sites

Since the Maritime land mass is submerging, many prehistoric sites are now underwater or washed away. In fact, present research indicates sites established prior to 500 B.C. have already disappeared.

ii) Shell Midden Sites

The shell midden, as discussed earlier, is an excellent source of information regarding settlement in the study area. Figure 3 in Appendix A, indicates the known occurrence of shell midden sites in the West Isles area. These consist of spring-summer-fall processing stations used by the Indian people in their seasonal quest for subsistence. The indications of occupation consist of discarded clams, mussel and sea urchin shells, as well as discarded animal and fish bones, artifacts, ancient fire places, pits and living floors. Typically, the organic remains are lacking from most New Brunswick sites, dissolved by our acidic forest soils. The shells neutralize the acid, however, and a wealth of information is preserved. Topics such as; season of use, resources exploited, butchering/ processing technology, and nutritional studies can be investigated.

iii) Passamaquoddy Tribe - Historic Villages and Camping Grounds

The historic resources such as those found at wigwam sites and the above discussed shell midden sites of the Passamaquoddy Indian tribe are also present in this area. Although reproductions of Ganong's map in Appendix A indicate known Indian villages and camping grounds, little is known about the history and background of native peoples in this archipelago.

iv) Champlain/Sieur de Monts Settlement

St. Croix Island, the site of the first settlement in this region, was excavated and revealed the graves of members of the Sieur de Monts expedition (see Figure 7, Appendix A).

v) Trading Posts

One of the earliest occupations of the islands occurred in 1704 when a trader of French origin occupied Indian Island. It was not until 1763 that a trading post was established on the island by James Boyd. However, this was phased out by 1800. Simonds and Hazen also had a trading post on Indian Island from 1763 to 1770. It was relocated in Saint John. One of the largest and most successful trading enterprises was that of James Chaffey, who operated an extensive trading, fishing and shipping business. Several structures still remain which attest to this rich era of coastal trade (See Figure 12, Appendix A).

vi) French Settlements

Evidence such as cellars and other ruins point to French settlements on St. Croix Island, Indian Island, Campobello Island, St. Andrews and St. Stephen. See Figures 4, 8 and 9 in Appendix A for locations of French settlements.

vii) Loyalist Settlements

The West Isles area became home to many people during and after the American revolution. As noted earlier, the entire coastline and major islands of Passamaquoddy were being settled as a direct result of the Revolution. Evidence such as historic cellars are indicative of the typical New England home, i.e. stone foundation with a massive central chimney (See Figure 11, Appendix A).

viii) Lumber Companies

By the late 1700's, the demand for timber accelerated at home and abroad. In 1784, eight sawmills were operating in the Passamaquoddy region. Wilson's Beach, Campobello Island was the site of Robert Wilson's lumber company and John Curry's lumber operation.

ix) Historic Shipbuilding Sites

Shipbuilding was a thriving industry in this area during the early 1800's (see Figure 12, Appendix A). The Richardson and Cummings Cove shipbuilding sites were respected for years because of the quality of their boats. Remains of the Cummings Cove yard and associated artifacts can still be found on the site.

x) Mines

As noted above, mining was never an integral part of the area's economy but was an interesting segment of the region's history. Evidence such as the headstock of one of the shafts sunk, is still present on Adams Island. Hardwood Island and Simpson Island were also subject to exploration.

xi) Historic Fishery

The fishing industry has long been the major resource harvesting activity in the West Isles area. For instance, as early as 1808, it was written that Deer Islanders were mostly fishermen. Over the years, fish (herring, pollock, mackerel, cod, haddock and assorted shellfish) have been harvested by many methods including: torching, gill-netting, seining, hand-lining, long-lining, trawling and of course, weir fishing. Weir fishing has been popular throughout history. In 1850 twenty-one weirs were reported off Campobello Island. Temporary dwellings, smoke houses and fish flakes were common sites along the shorelines. The fishery is of tremendous cultural value, especially in portraying the traditional relationships between man and sea.

xii) Shipwrecks

The remains of a number of shipwrecked boats and their cargoes are known to exist in the area of the proposed marine park. Most are merchantmen or fishing vessels of various sizes, but at least one admiralty ship (Britannia) is known to have foundered in the area. In fact, some of the latter has been "excavated" already;

unfortunately, before the basic tenants of modern marine archaeology were established. Other wrecks can be found in the study area off Pendleton Island, Sandy Island, Spruce Island, Chocolate Cove, Deer Island and possibly off Hospital Island, Deer Island Point and elsewhere in the Bay of Fundy (see Figure 12, Appendix A).

xiii) Lighthouses

Due to the number of shipwrecks in these treacherous waters, it became necessary to erect lighthouses. Lighthouses in earlier days were equipped with oil lanterns. Grand Manan constructed its first lighthouse in 1831. In 1871, the first lighthouse on Campobello Island was erected at Head Harbour Island. A similar structure was built at Mascabin Point (see Figure 12, Appendix A).

It is apparent from the previous discussion and the above outline that the West Isles has a diverse range of cultural and historic resources which merit careful consideration in any development scheme for this area.

6. HERITAGE CONCERNS AND OPPORTUNITIES

The importance of the heritage resources in this area cannot be stressed enough. Efforts must be made to protect these heritage resources in and outside the boundaries of the proposed National Marine Park should it be created. Careful planning would alleviate many concerns as well as present many opportunities for the preservation and enjoyment of heritage resources in the area.

Impact of Proposed Park on Heritage Resources

The development of a National Marine Park in the West Isles, New Brunswick, would have a tremendous impact on these heritage resources, most of which would be negative unless concerns for these resources are an integral part of park planning. While presently the largest threat exists in the form of continual coastal erosion, the increased number of visitors enticed to the area by the Park would bring additional problems to these fragile resources. Erosion has exposed most of the sites making them prime targets for looters. As well, aspects of the development of park facilities could effect sites. For instance, at Kouchibouguac Park, known archaeological sites were disturbed by park development and some sites were lost. The economic spin-offs in the communities around the islands may also threaten sites. While a park plan can protect resources inside the park, those outside the park boundary would not be afforded the same protection. Archaeological sites on Bliss Islands and Teacher's Cove would be subjected to increased visitor traffic as well. Furthermore, it is possible that additional significant archaeological sites in or near the study area which have not been found or identified could also be disturbed or destroyed by development and construction of infrastructure

and facilities. As Parks Canada wisely points out, few, if any, land uses, either within or outside park area, can occur without effects on the surrounding land (Parks Canada 1979:15, 41).

Additionally, the opening of the area to scuba divers poses other problems. Wreck diving would necessitate the development of a very strict set of guidelines to safeguard the heritage resources.

"Historic resources in Canada are scarce, often unique, nonrenewable, tangible relics of man's past" (Parks Canada 1979:27). As illustrated above, the heritage resources of this area range from archaeological evidence of prehistoric occupation to historic buildings and antiques. All of the above can be easily destroyed by man and nature. For this reason, proper protection and preservation is mandatory.

Proposals to Mitigate the Adverse Effects on the Heritage Resources

The International Union for the Conservation of Nature (I.U.C.N.) views marine parks and reserves as areas which would be designed, among other things, to protect valuable archaeological, historical and cultural sites (Hardie and Jennings 1981:2). One of the major objectives in the West Isles National Marine Park concept is to preserve and protect the unique resources of this area. The key to this objective is the draft National Marine Parks Policy that the natural and cultural resources within a national park will be given the highest degree of protection so that they will be left unimpaired for future generations (Hardie and Jennings 1983:28).

Structures and artifacts associated with Canada's past should be protected utilizing the appropriate sections of the draft National Marine Parks Policy (Hardie and Jennings

1981:92). Thus prehistoric resources such as shell middens and historic structures such as the Chaffrey Estate can be preserved.

In order to provide continual protection of these sites, it is necessary to ensure that visitor activities do not result in harmful changes to such resources (Hardie and Jennings 1981:11). Various zones can be identified within and outside the proposed park to reflect the degree of resource protection and the type and intensity of visitor use that would be appropriate. In this way a balance could be achieved between visitor use and preservation of resources.

The implementation and adherence to various laws and regulations would help to mitigate the adverse effects on the heritage resources. In addition to guidelines outlined in the draft National Marine Parks Policy, other laws and regulations will be useful in maintaining and preserving heritage resources. For instance, guidelines for scuba diving could not only emphasize diver safety but resource protection. First an inventory of underwater resources (i.e. shipwrecks and archaeological sites) must be done. Then park resource protection guidelines should include diver registration and zoning of the park for diver access (including time zones) as well as adequate patrolling to ensure that rules are strictly adhered to (Hardie and Jennings 1981:94). In the case of chartered vessels and private pleasure craft, they would have to follow certain guidelines. Operators of chartered vessels and pleasure crafts would be required to inform park officials of their presence and whereabouts in the park (Hardie and Jennings 1981:94). Certain areas of the park (i.e. weir sites, etc.) could be off-limits to boats while other areas could be limited to restricted access. Again, these regulations must be strictly enforced.

Finally, construction and development of facilities (motels, service centres) and infrastructure (roads, docks) should be limited to areas where they will not disturb or destroy archaeological sites. Ultimately, it is the responsibility of Parks Canada, in conjunction with other agencies, not only to protect but to present heritage resources in ways which reflect the inter-relationships between man and nature.

The Potential of Heritage Resources in Furthering the Park's Major Theme

The proposed theme for the Park is man-sea relationships. These relationships exist not only in the present; they have existed throughout the total period of man's use of natural resources - some 10,000 - 12,000 years, during which there also have been some major alterations in the natural environment. For example, the spectacular tidal range which creates such rich sea resources is a product of only the last 6,000 years; before that the Bay of Fundy was a warm, almost non-tidal sea.

The concern over man-sea interaction is the very stuff of archaeological research in the area. The whole aim of such research is to elucidate the subtle interaction between the two and demonstrates man's successful exploitation of the area. In terms of archaeology, this is not a static or passive objective. While coastal Charlotte County has undergone the most archaeological research of anywhere in the province, more study is desired. The exciting hypotheses concerning seasonality, discussed earlier, will require further examination of the sites and excavation of new ones.

In fact, archaeological research is very dynamic. The process of archaeology itself could even become one of the "terrestrial attractions". It is, after all, part of the policy of Parks Canada to undertake interpretation programs within parks which illustrate the meaning and value of heritage

resources. The shell middens with their food remains, hunting and processing tools, and signs of occupation could be attractions in themselves during excavation. At the minimum, a static display could certainly amply demonstrate the long history and nature of the changing man-sea interaction. Much of archaeology is interpreted in this ecological framework where cultural and natural systems are treated together.

A potential site for continuing research and interpretative opportunties could be any one of those sites indicated on Figure 3 or Figure 6. Partridge Island, though, as indicated earlier, is of particular interest to archaeologists and, in that respect, may be suitable for ongoing research.

An obvious and quite fitting interpretive program for this area could centre upon an historical fishermen's village. As suggested by Hardie and Jennings, the following items are typical of structures and buildings which might be found in such a village:

Blacksmith Shop
Barrell Hooping Shop (Cooper)
Fish shed containing:
- racks for drying fish
- racks for drying sounds (air sacks used in glue manufacture)
- tubs for salting fish
- area for drying dulse

Smoke shed
Shipyard
Lobster Trap Building Pier
Net Mending Shed and Tar Pot (for tarring nets and turning cod livers into oil)
Saw Mill
Gin Still
Period Houses
Inn

Restaurant
Country Store
Carriage House
Livery
Barns
Gardens
Wharves
Fish Cannery
Weirs

(Hardie and Jennings 1981:70,71).

In keeping with this theme, it should be remembered, as discussed previously, that the herring and associated weir fishery have dominated the history of the West Isles. Thus a key element of the marine park concept in the West Isles would be a fishing weir. As Hardie and Jennings indicate, Bean Island and other islands such as Adam and Hardwood Islands are ideal areas to interpret this aspect of the fishery to the public. Also, the utilization of an island site could illustrate the above discussed pattern of seasonal family settlement of such islands to tend weirs. Furthermore, if Adam Island is utilized, artifacts from the mining days could be restored for interpretative purposes.

Another island ideally suited for restoration and interpretation purposes is Indian Island. Not only is Indian Island one of the more scenic areas with the greatest diversity of marine bird and mammal themes, it also has the highest concentration of historic and cultural resources in the West Isles (Hardie & Jennings 1981:59). This island, as its name suggests, was home to Indians for many years. As discussed earlier, it also was visited by the earliest explorers and later became the fur trade post of the West Isles. However, its renown came later with the early British settlement. The Chaffey trading empire of this era was rivalled by few. Thus

as Hardie and Jennings point out "here the different era themes from the earliest explorers to the early fur trade, early British settlement and the more contemporary 19th and 20th century settlement activities could find expression through preservation of existing structures and the possible restoration and reconstruction of buildings once common to the site" (Hardie and Jennings 1981:62).

Also directly related to the fish and trade activities are the shipwrecks which are integral parts of the marine history in this area. However, before these resources can be interpreted, a descriptive inventory of known and potential shipwreck resources must be completed. Once this is done, the remains of the wrecks such as the Britannia on Sandy Ledge, offer the opportunity to interpret life on the sea, especially 18th century shipping and trade.

Other potential interpretative themes include those activities which are directly related to man-sea relationships such as shipbuilding. Since shipbuilding was a major source of income and pride for many in the study area, it merits attention. It may be possible to establish a small scale shipyard site showing the technology that was utilized during that time.

Hence not only does this area have rich marine resources, it also has a wealth of terrestrial heritage resources to be admired, enjoyed and protected. It must be remembered that while all Canadians have a right to appreciate their heritage, the means of doing so and the facilities provided will depend on the sensitivity of the environment to human impact (Parks Canada 1979:43). To conclude, the incorporation of archaeological concerns and research into the Park development could not only mitigate much of the adverse effect on heritage resources, but provide something very positive to the whole Park concept itself.

A Preliminary Management Plan for Heritage Resources in the Park

Development of the Park, at a minimum, will have to incorporate archaeological/heritage concerns into the Park management plan. Proposals to mitigate the adverse effects on heritage resources, which are discussed above, must also be part of the Park management plan. One way to satisfy both of these needs is to designate the area not only as a national marine park, but as an historic park. This can be easily accomplished as this area meets the criteria of a national historic park in that it is "a place which sheds light on or illustrates effectively the culture of a prehistoric people, or (is) associated with important archaeological discoveries" (Parks Canada 1979:23). This designation plus the utilization of the various sections of the National Historic Parks Policy will afford resources in the park added protection and security. This would be consistent with the I.U.C.N. view that marine parks are areas designed to protect valuable archaeological, historical and cultural sites (Hardie and Jennings 1981:2).

Furthermore, as noted above, visitor activities will have to be regulated to prevent harmful effects on heritage resources. Zoning is the most useful regulatory device to accomplish this end, inside and outside the park boundaries. A variety of zones, each indicating the degree of resource protection required, and the type and intensity of the activity allowed, could be established. Hence visitor access will be strictly controlled and may be prohibited in some areas.

On the subject of construction of facilities and infrastructure, Parks Canada, in conjunction with other agencies and departments, would have to determine the effect of such development on the prehistoric, historic and natural resources in the area. Ultimately, in order for the national marine park

to be successful in protecting, preserving and interpreting the unique resources of this area, a stringent management plan of zoning, regulation, access and enforcement must be developed by Parks Canada and other groups concerned with the development of this area.

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A P P E N D I X

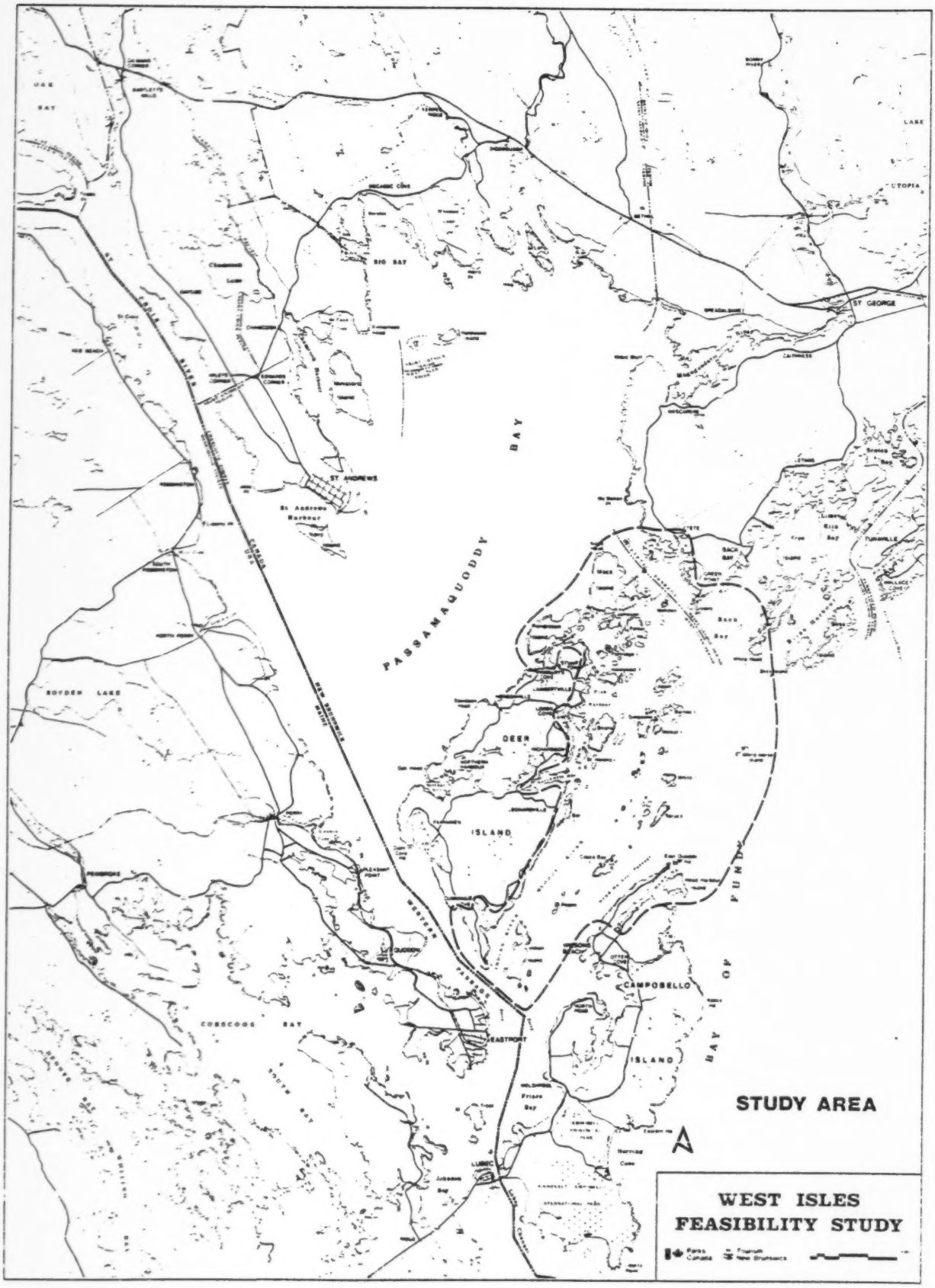

PASSAMAQUODDY BAY
BAY OF FUNDY
DEER ISLAND
CAMPOBELLO ISLAND
ST GEORGE
ST ANDREWS
UTOPIA
STUDY AREA
WEST ISLES FEASIBILITY STUDY

Figure 2: Relationship Between Foreshore Slopes and Radio-carbon Dates at Seven Passamaquoddy Bay - West Isles Archaeological Sites. (Black 1983:9)

BgDs 6 - Sand Point
BgDr 48 - Partridge Island
BgDs 10 - Minister's Island
BgDr 4 -
BgDr5 -
BhDr 1 -
BgDr 11 - Teacher's Cove

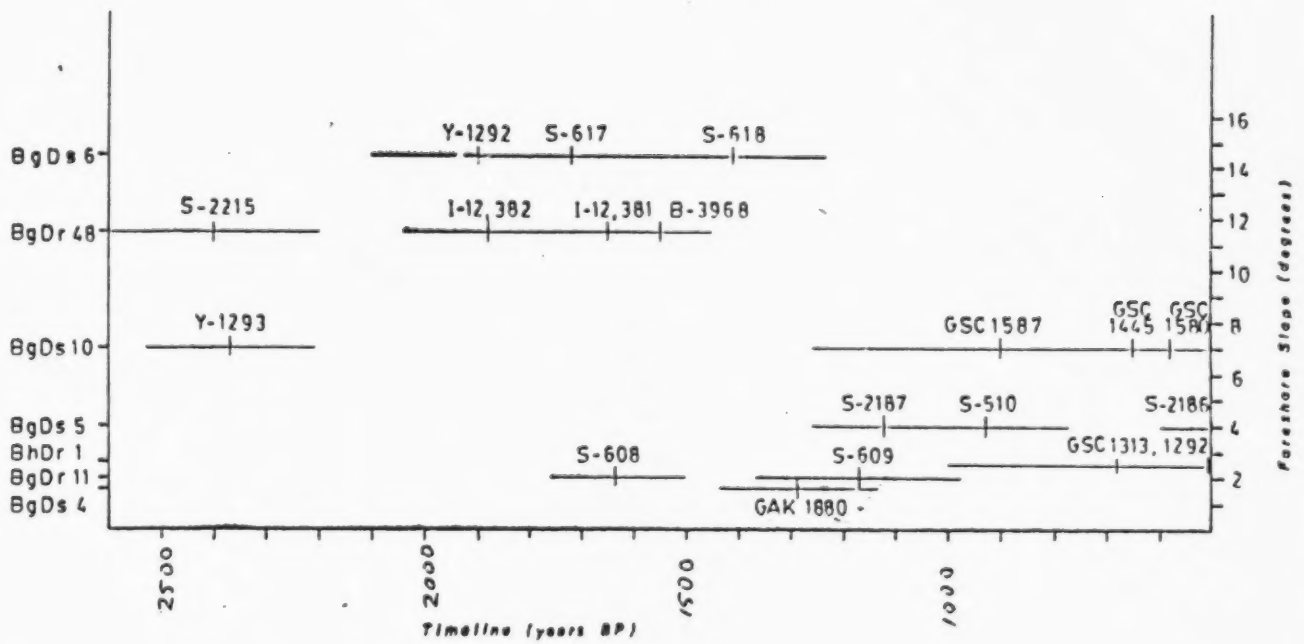


Figure 3: Shell Midden in the West Isles Area

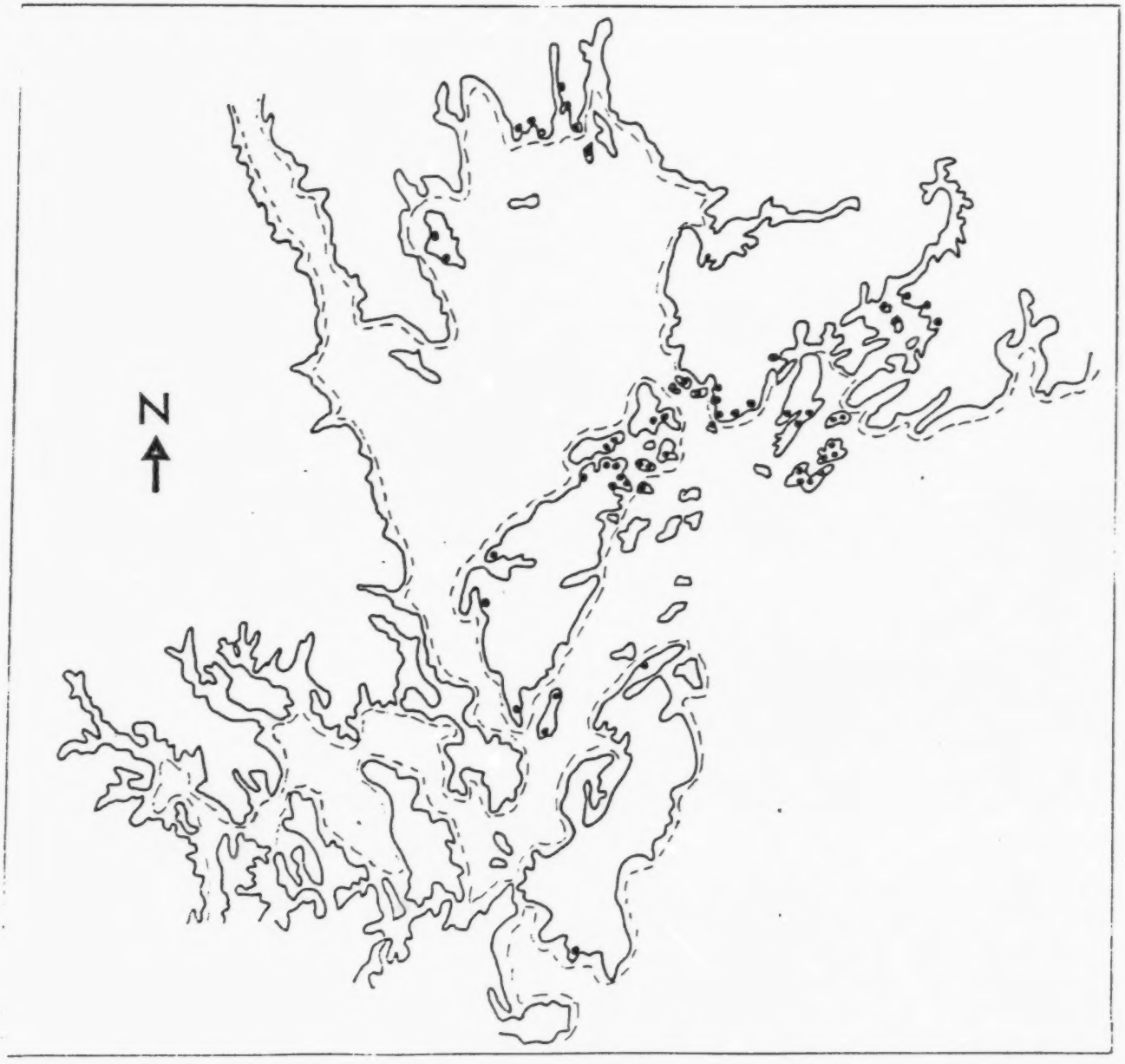


Figure 4: Historic Map of Passamaquoddy Bay Illustrating Indian Campgrounds and French Settlements (Ganong 1983:112).

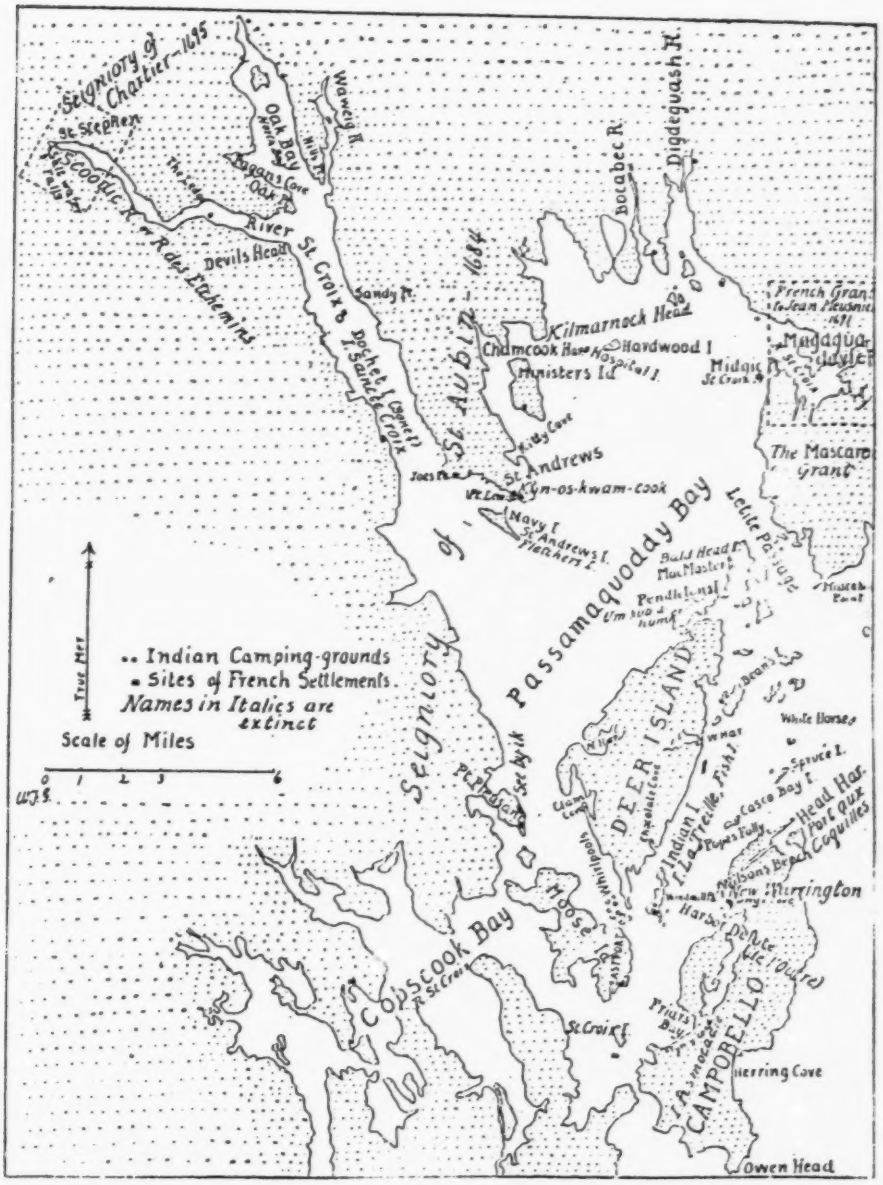


Figure 5: Indian Routes of Travel in New Brunswick (Ganong 1899).

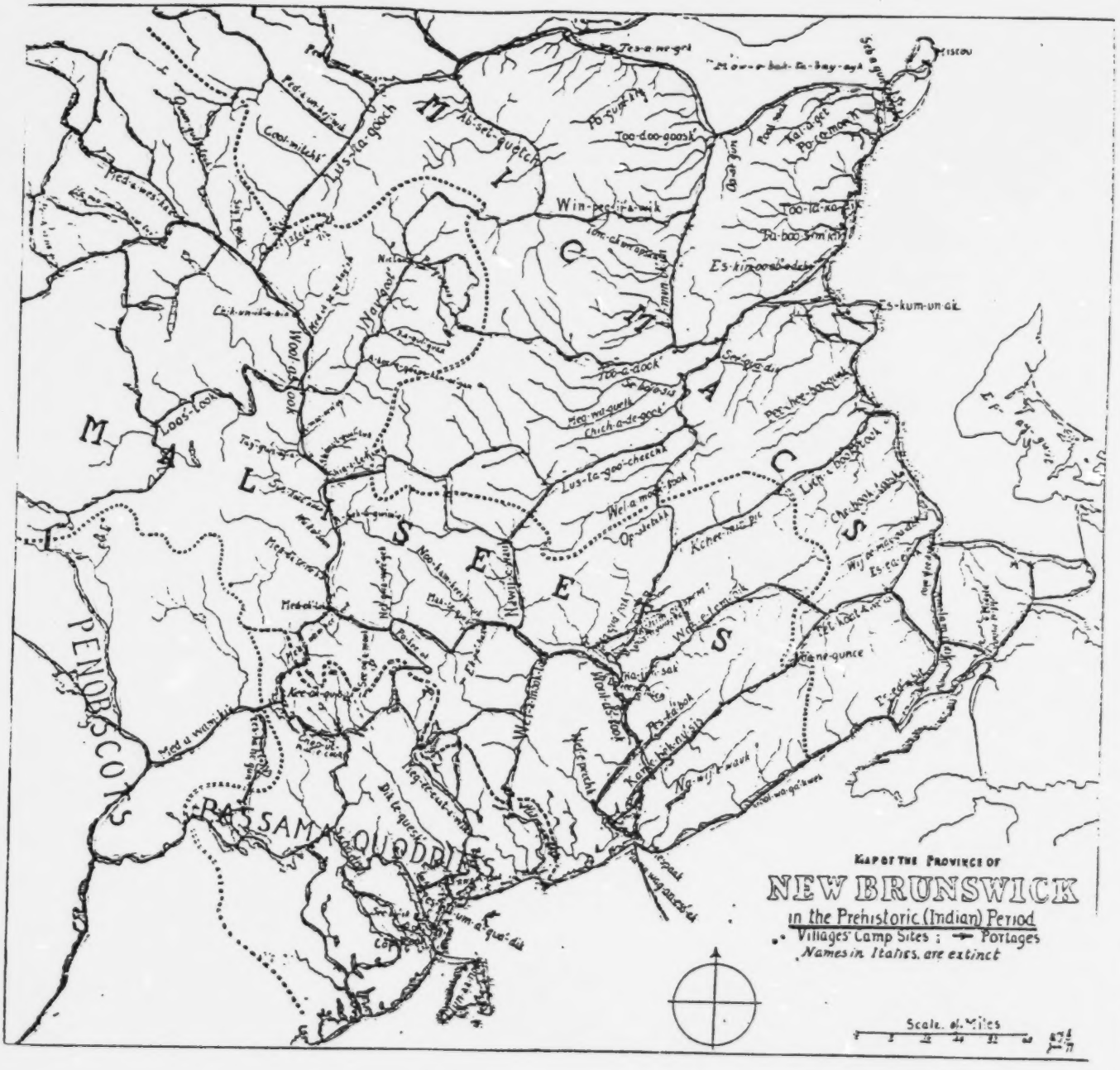

MALISEETS
MICMACS
PENOBSCOTS
PASSAMAQUODDIES
Es-kum-un-gil
Win-pe-ga-wik
Too-doo-goonk'
Ab-set-gudgech
Lus-ta-gooch
Chich-a-te-gooch
Lus-ta-goo-cheech
Wel-a-mook-took
Op-sketkek
Kich-e-mai-pic
Ne-gis-e-wack
Ne-gis-e-wack
Ne-gis-e-wack

Figure 6: Heritage Resources - Historic Period.

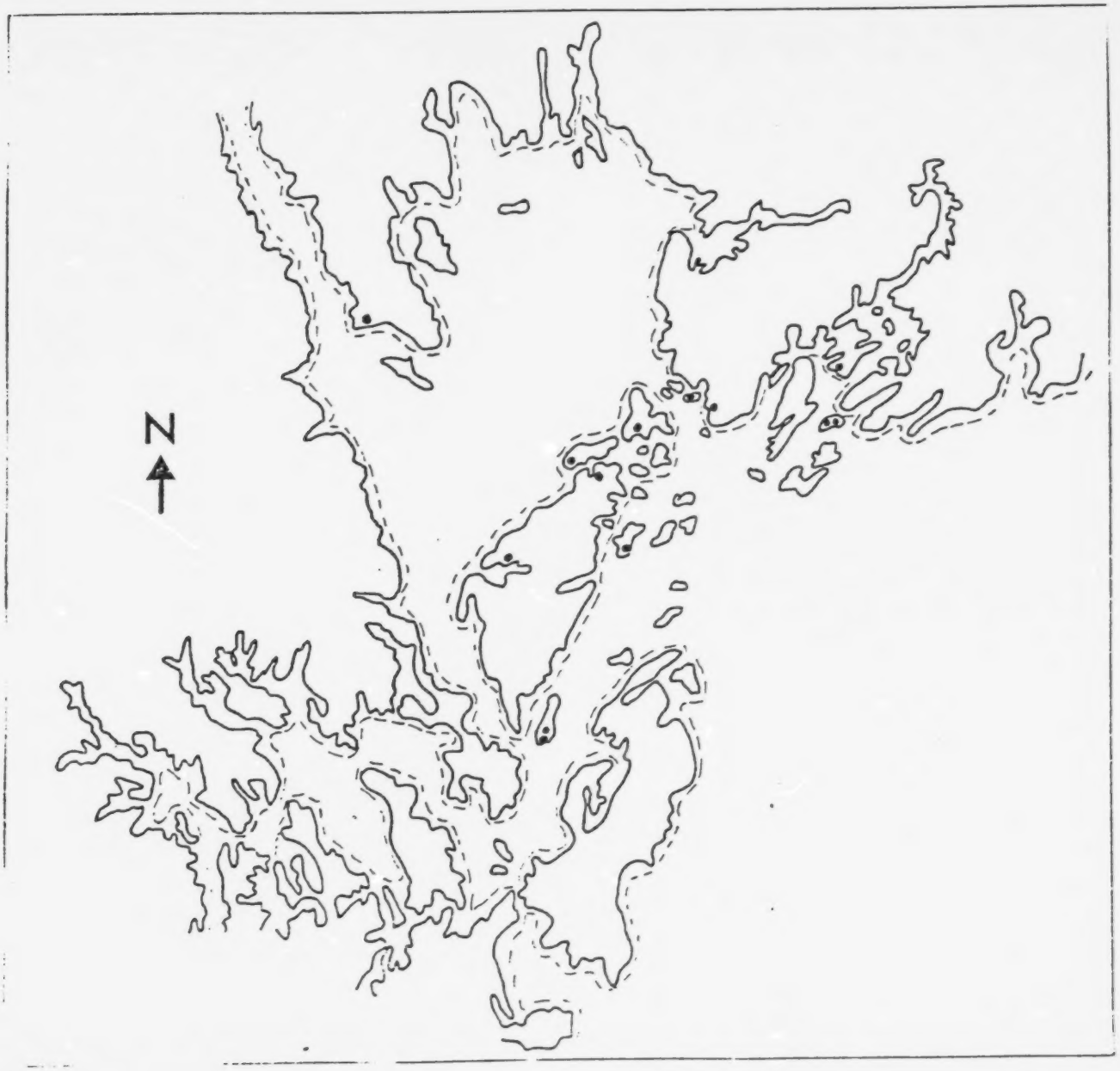
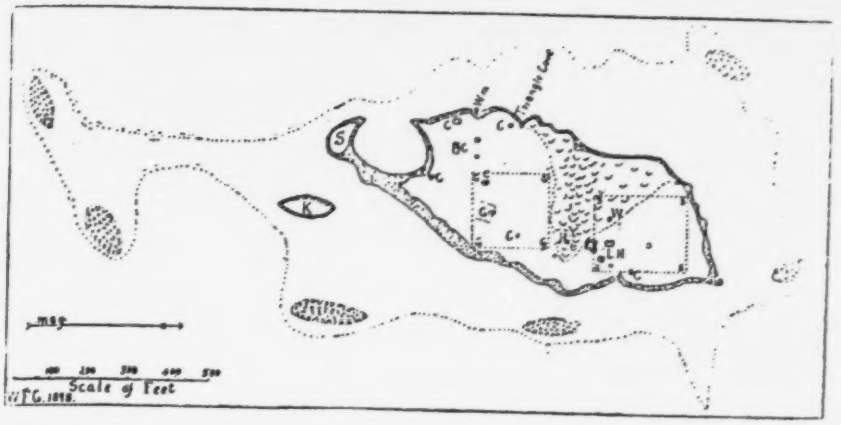


Figure 7: St. Croix Island (Ganong 1983:53).



C. Cellars, mostly modern.
GGGG. Approximate position of DeMonts' gardens.
Gm. Modern garden.
H. Highest point of the island.
K. Knoll on which DeMonts' cannon were placed.
LH. Lighthouse buildings.
S. Another isolated knoll.
SSSS. Approximate site of DeMonts' settlement.
W. Supposed old "French" well.
Wm. Modern well now on the beach.
The irregular dotted line incloses exposed ledges.

Figure 8: Settlements, Forts, and Seigniories in the Exploration and Acadian Periods (Ganong 1899:312-313).

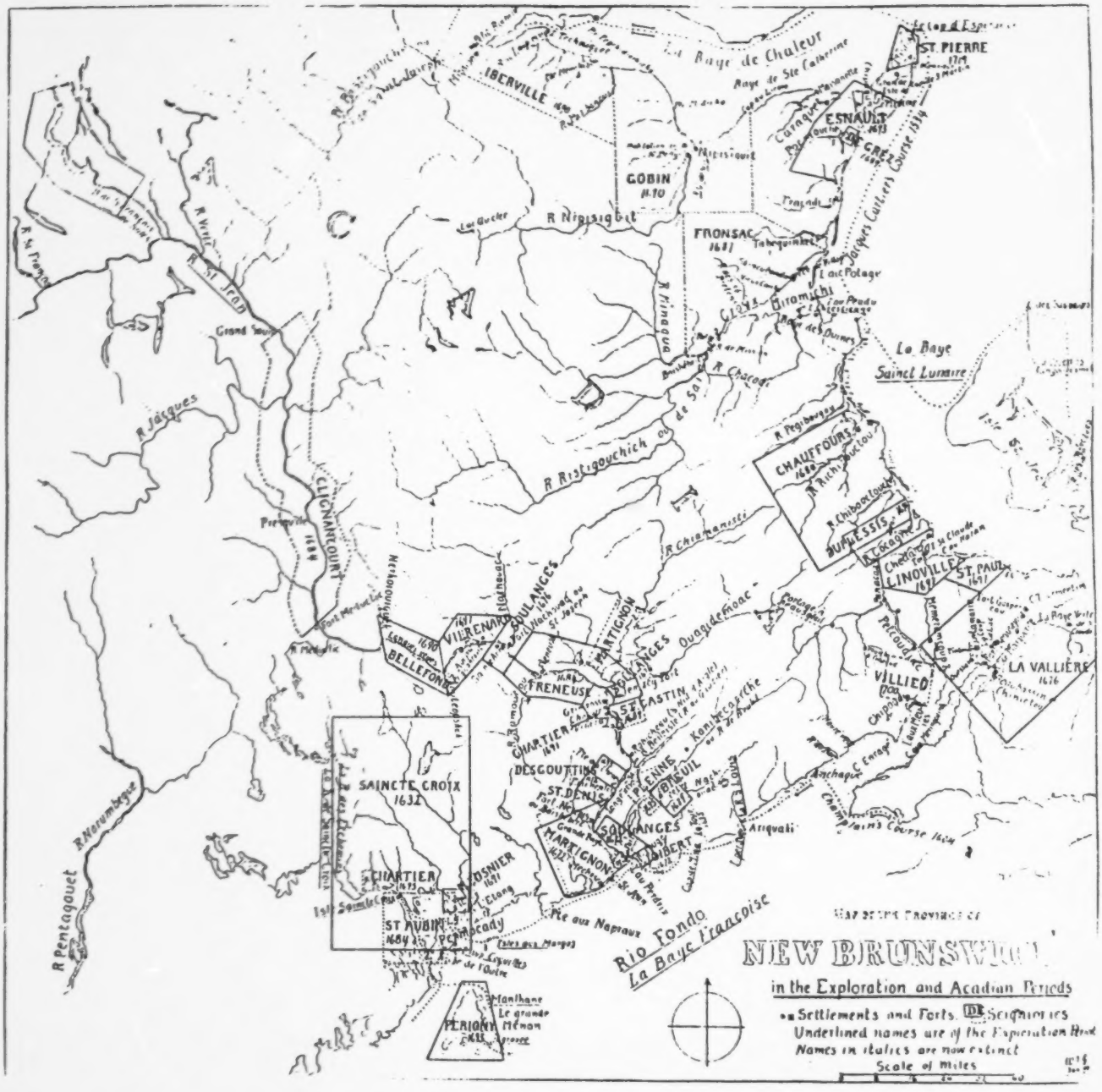


Figure 9: French Settlements and Fishing Grounds (Ganong 1983:55).

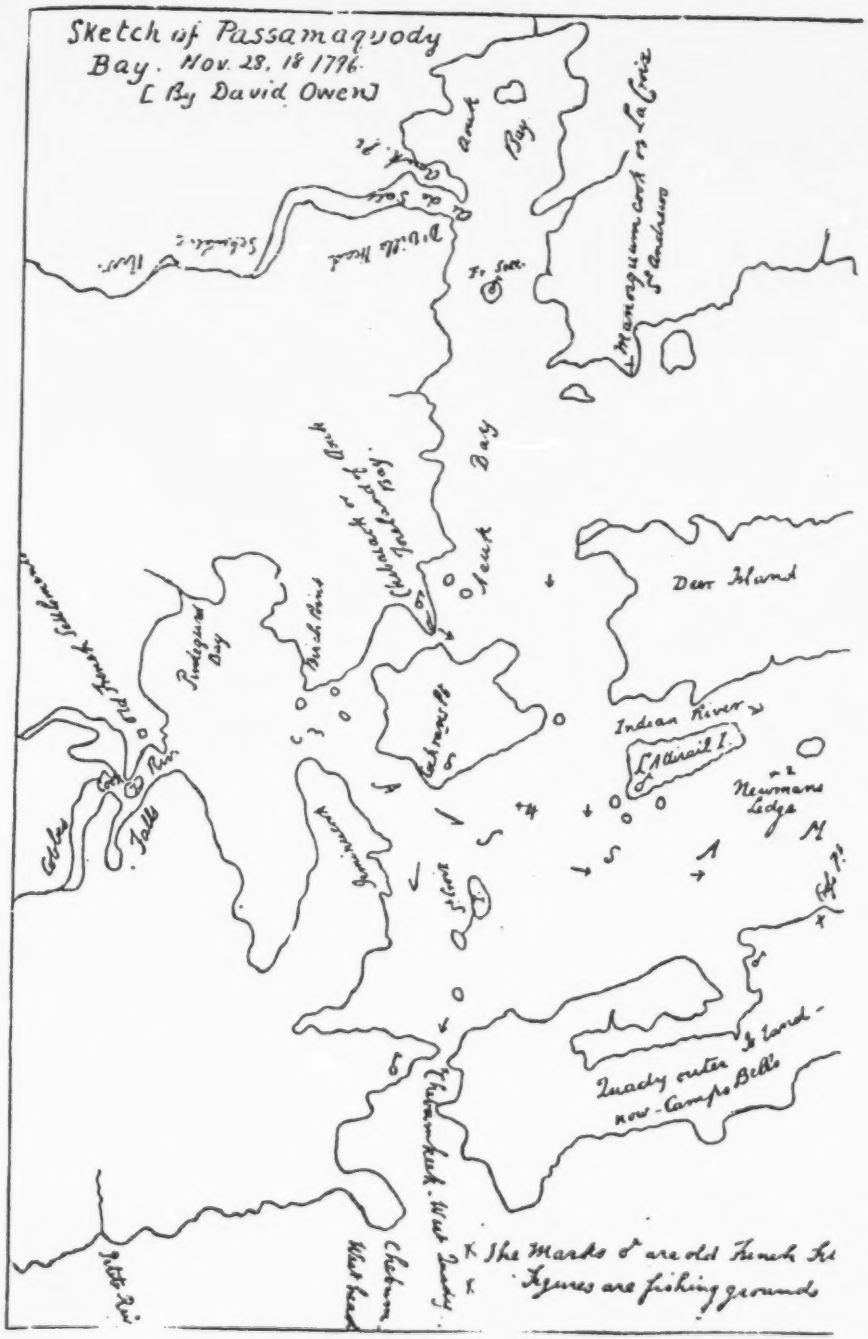

Sketch of Passamaquody Bay. Nov. 28. 1796.
[By David Owen]
Deer Island
Indian River
L'Ilinait I.
Neumans Ledge
Quoddy outer now Campobello
Pettes Ri
Chubenacadie
Chubenacadie Bay
Pendigwash Bay
Old Shamcock River
Falls
Cove
Bay
Point
Mouth
Harbour
Passamaquody Bay
Indian River
Deer Island

Figure 10: Settlements and Forts of the English Period (Ganong 1899:330-332).

1. To Capt. Sheriff and Lieut. Gamble, at the Ledge; known only by a reference in Tucker's Grant; size and date unknown. Perhaps only a reservation.
2. 1765—Oct. 18. Perkins (Indian) Island was granted with other lands on the St. John to Thomas Falconer and others (i. e., No. 23 below).
3. Oct. 31. To Francis Bernard and four others, 100,000 acres between the Cobscook and Scoodic.
4. 1767—March 28. James Boyd; 1,000 a. at the mouth of the Bocabec (not Dickawasset as in grant book).
5. July —. To John Tucker, 20,000 a. on Scoodic River.
6. July 17. Augustin Oldham, 10,000 a. east of the Digdeguash. (Esch.)
7. Aug. 21. John Mascareen, 10,000 a. south of the Magaguadavic. Gave origin to the present name of the locality. (Esch. 1785.)
8. To Thomas Gambel. S. of Mascareen's Grant, at Letite, 2,000 a. Known only from an old map.
9. Aug. 21. Edward Crosby, 10,000 a. north of the Mascareen Grant.
10. Aug. 21. Joseph William Gorham, 10,000 a. east side of Scoodic, near its mouth.
11. Aug. 21. Jo. William Gorham, 10,000 a., including Oak Bay.
12. Aug. 21. Joseph Gorham, Deer Island and an island adjoining.
13. Sept. 30. William Owen and others, Passamaquoddy Outer Island, 4,000 a. Named by them Campobello. This grant holds good to this day, almost the only one in this list which does.
14. 1771—June 20. William Owen. Three small islands northeast of Campobello.
15. 1774—April. Captain Thomas Farrel, 2,000 a. at mouth of Digdeguash.

Lord William Campbell applied for a reservation of Grand Manan in 1776, and later attempts were made by his heirs to secure the island. (On which see Howe, Coll. N. B. Hist. Soc. I., 345, also Archives, 1891, 253.)

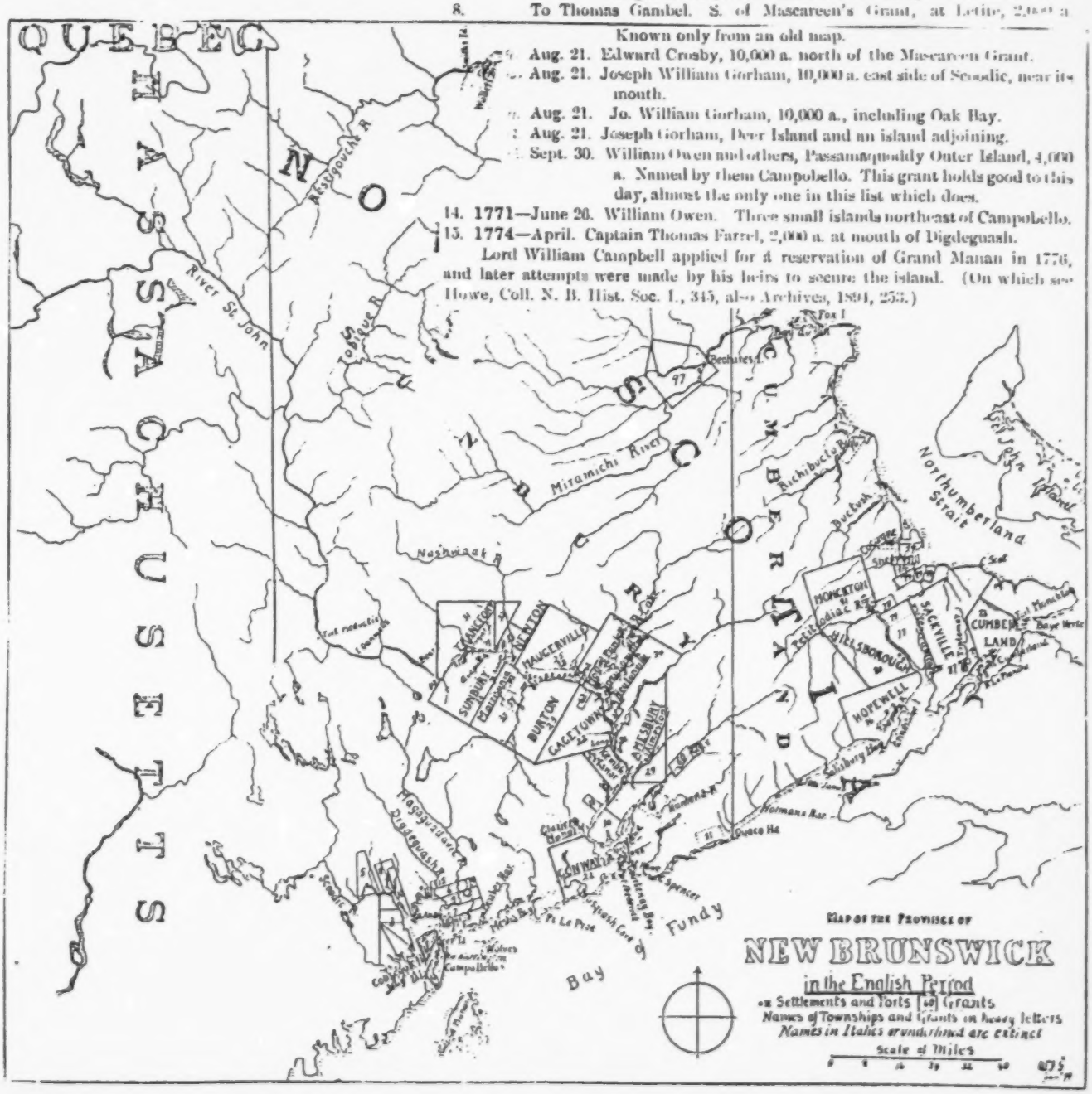


Figure 11: Map of New Brunswick in the Loyalist Period Showing Land Grants (Ganong 1899:339, 340, 344-345).

1. 1784—Feb. 20. Peter Clinch, 700 a. on Musquaquadavick.
2. Mar. 29. Lieuts. Thomas Fitzsimmons and Colin McNab, 1,000 a. Digdeguash. (Esch.)
3. Mar. 29. Colin Campbell, 2,000 a. at Digdeguash on Passamaquoddy.
4. Mar. 29. Capt. Philip Bailey and 58 others, **Royal Fencible Americans,** 10,150 a. on Magaguadavic.
5. Mar. 29. Doctor William Paine and 19 others, 5,500 a. on Magaguadavic River, Harbours Lepite and Letang.
6. Mar. 29. John Curry and 42 others, 15,250 a. on the Digdeguash.
7. 1784—Apr. 24. Edmund Phelon, 1,000 a. on Magaguadavic.
8. 5 May 13. [30] Patrick McMasters and Daniel McMasters, 2,000 a. on Magaguadavic.
9. 2. July 31. William Gammon and 429 others, lots in **St. Andrews.**
10. Aug. 3. Thomas Wyer and 6 others, 1,531 a. on Oak Point and elsewhere in Charlotte.
11. Aug. 3. Stephen Roberts and 189 others of the **Penobscot Association,** 19,000 a. in Charlotte, in six lots.
12. Sept. 16. John Dunbar and 105 others, 179½ a. garden lots at Scoodic (St. Stephen). (In **Morristown.**)
13. Sept. 16. Capt. Nehemiah Marks and 120 others, **Port Matoon Association,** 19,850 a. on the Scoodic.
14. Sept. 21. Dugald Thompson, ¼ lot in St. Andrews.
15. Oct. 1. William Clark and 223 others of the **Cape Ann Association,** 22,600 a. in Charlotte.
16. Oct. 1. Joshua Watson and 6 others, 7,000 a. on north side of Le Proe River, about the harbour.
17. Oct. 1. John Matthewson, 100 a. on the Waweig.
18. Nov. 1. John McLeod and 150 others, town lots of **St. Georges,** Harbour Letang.

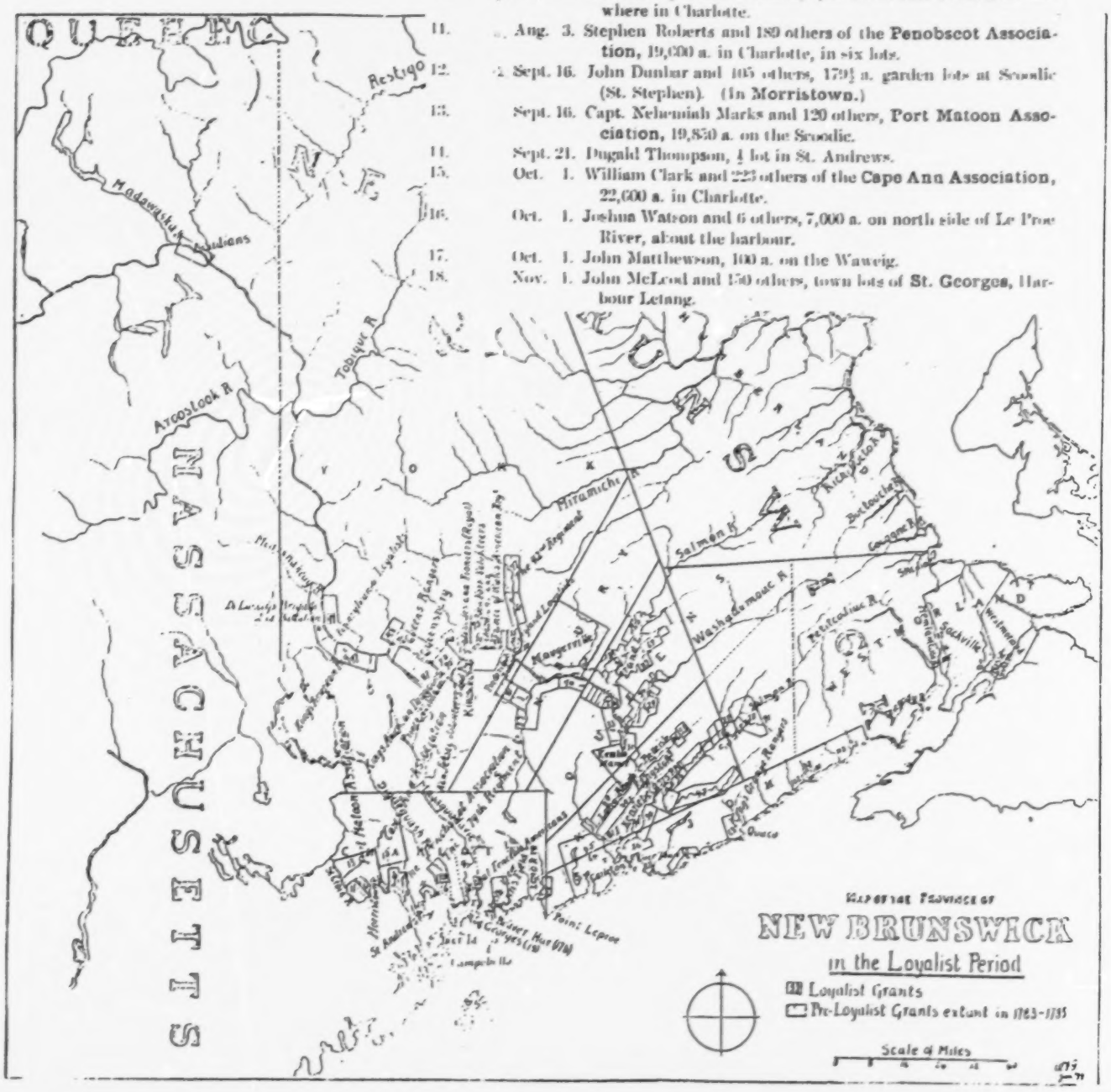
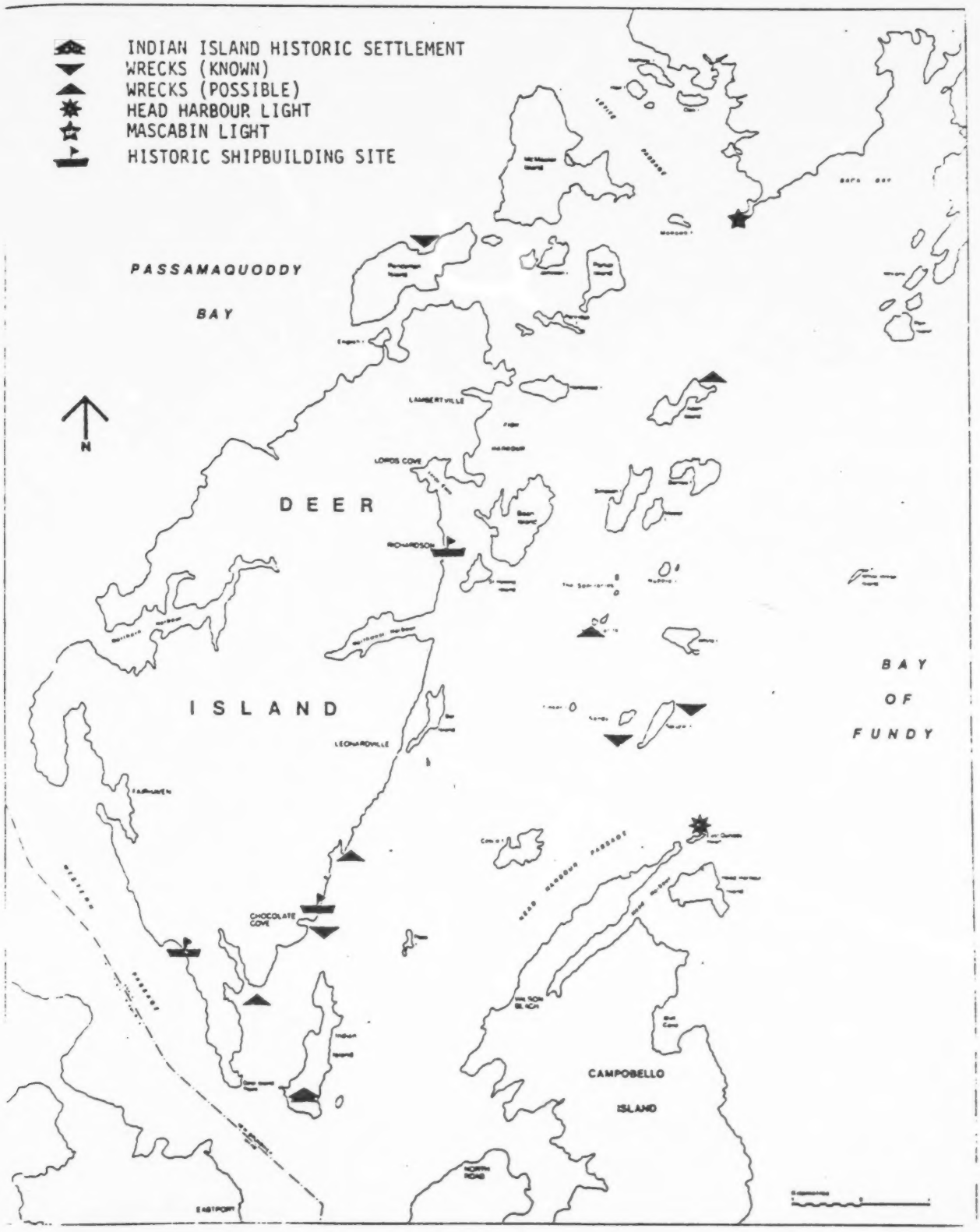


Figure 12: Lighthouses, Shipwrecks, Shipbuilding Sites and Indian Island Historic Settlement (Hardie and Jenning 1983:49).



B. OTHER METHODS EMPLOYED IN THE HERRING FISHERY

Other methods of herring fishing include torching, gill-netting and purse-seining. Torching or driving, as it is otherwise known, is one of the earliest techniques of fishing which is still occasionally utilized today. At night, lights (to which herring are attracted) were attached to small boats. As fish were attracted to the surface of the water, they were dipped into the boats by a small dip-net (McPhee 1963:38). Today this method is used to attract herring into weirs. Noise is used also to scare herring into weirs.

Later, in the middle of the nineteenth century, gill-netting became popular. This type of fishing used long nets which held the fish according to their size and trapped the gills of herring in the mesh (McPhee 1963:38). Although McPhee contends that gill-netting began to decline in the 1890's and by 1945 had virtually ceased, a fisherman from Grand Manan stated that gill-netting is still popular in this area today.

Purse-seining, another method of herring fishing, was started in the United States around 1865 but it did not begin in the Bay of Fundy until 1934. It continues in much the same manner today. In the beginning, seining was strictly a wintertime operation utilizing lobster boats with seine nets. An increasing demand for fish products during World War II led to greater emphasis on seining. Seiners were larger and had more equipment such as depth finders. Depth finders locate the ocean bottom and the surface. This was a definite improvement over the string method (McPhee 1963:54) but correspondingly capital investment also increased. Seining represented changing technology, introduction of mobility and year-round fishing. (In the winter seining is carried out in the daytime while from June to December it is done at night.)

Purse-seining is quick and efficient. Purse-seiners can literally go after the herring once their equipment locates them. Herring can be pursued off the coast of Nova Scotia, Grand Manan, as well as in the Passamaquoddy Bay area. Seining is a highly productive method of fishing which requires a small labour force. One man or a "company of men" usually owns a purse-seiner while the crew (five or six men) is hired on the basis of a share of the catch (McPhee 1963:55).

Herring caught by seiners were sold to Canadian and American markets as were weir herring. This is still true today. Purse-seined herring still brings a lower price than weir herring but the quantity is greater. Purse-seiners, generally, acquire the market of a certain processing plant and "run" to that factory regularly, often supplying it with fish for many years (McPhee 1963:56). Therefore to enter this market was most difficult as competition was fierce and remains so even today.

Herring carriers, also central to the herring industry, transport the herring from the fishermen to the processors. "This branch of the fishery has evolved from individually owned boats in which each weirman transported his catch to his own smoked herring stand, to a specialized system of transportation" (McPhee 1963:65). As Charlotte County processors have their own carrier service, most carriers transport herring to American processors in the summer months. In winter months carriers transport lobster and pollock. Those who are under contract to deliver fish to a certain plant are essentially an agent of the processing plant, buying from weirmen and seiners fish at a price predetermined by the processor.

A more recent addition to the herring industry is the pumper or scaler. Basically, the pumper pumps the herring from the weir or seine into the herring carrier. The scales on the herring are removed simultaneously. (As noted above, the old

method of scaling was more arduous.) A suction hose is inserted into the weir or seine and the fish are pumped through this over a series of wire meshes which remove the scales. The scales then drop down a chute into baskets which are placed under the sluice (McPhee 1963:70). The herring is pumped directly into the carrier. Pumpers are usually lobster boats with a pumping attachment added. In return for pumping the fish from weirs and seiners, the pumper keeps the herring scales. These are then transferred by carriers to mostly American processors.

Herring shut-off is another technique utilizing the purse-seine net. The net is stretched across the mou .. of a cove or bank close to the shore. Large round ballon buoys delineate the area. When the fish enter the area the net is set up and the fish are pumped out in a manner similar to that of a weir being pumped (Siminoff 1978:34).

The abundance of herring in this area led to the creation of a vital industry. The sardine industry in New Brunswick had its beginnings in 1885, when two Connors brothers started fishing the Passamaquoddy Bay for sardines (small herring) (Connors Bros. Ltd. 1953:1). Originally, they sold their sardines to American processors, then they decided to open up their own factory closer to home. At this f..ctory there were no mechanized flakers or canners, everything was done by hand. The business expanded and continued to do so under the MacLean brothers. Fish processing still plays a major role in the economy of the study area. (Hardie and Jennings 1981:60).

It is obvious from this discussion of the herring fishery that a variety of methods have been employed in this industry over the years. Even with changing technology, the herring fishery has changed little and still dominates the economy.

C. METHODS OF GROUND FISHING

Ground fishing is also an important sector of the fisheries. The following methods or techniques of ground fishing such as hand-lining and long-lining have changed little over the years. Hand-lining is the simplest of all fishing techniques employed to catch ground fish. Hand-lining, although never regarded as a highly productive industry, was a popular way for fishermen to augment their income in the early part of the twentieth century. In the 1800's during the months of August and September both American and British boats could be found closely anchored together at slack tide in wait for eddies of abundant pollock (Perley 1852:113). Along with pollock, other species such as cod, haddock, and an occasional dogfish, sculpin or skate were caught (Perley 1852:113). All that was needed to go hand-lining was a small boat, line and a lead to act as a weight (Siminoff 1978:27). The line with several hooks attached was casted overboard and held so as not to let it touch bottom. The line was then hauled in at least every three minutes.

On Deer Island, ground fishing was most popular, and pollock, particularly, was considered to be most profitable. However, in 1850, Deer Islanders complained that they had insufficient small herring for pollock bait (Perley 1852:115). The shortage was blamed on the Indians' hunting and continual firing at porpoises, a species responsible for chasing herring into eddies near the shore (Perley 1852:115). However, pollock once caught by hand-lining were split, washed and lightly salted in tubs and hogsheads. Fish laid in salt for three to five days. Then they were washed in their pickle and piled to drain for one day, after which they were put on flakes. After curing for a week in fine weather, they were spread out to dry (Perley 1852:115). Pollock and other ground fish, once cured, was shipped to American markets as well as Cuba and the West Indies.

Few changes in this branch of the fishing industry have occurred. Of course, power boats have replaced sails, and herring is used less as bait. Today flies and bugs are used, and lines may be hydraulized. An area fisherman stated that hand-lining is still very popular today.

Long-lining was introduced to the study area near the end of the century. This method of fishing employs a long line fitted with a great many hooks (baited with herring) which are attached to the main line by thin strong lines every two feet. This is referred to as trawling. (This type of trawling is an inshore activity not to be confused with the large offshore stern trawling operations). Each end of the trawl is fastened to a large buoy. The front buoy is then anchored to a chosen site in the water and the boat proceeds forward slowly as another man throws out the line. This also can be done by a machine which ejects the trawl line at a steady rate (Siminoff 1978:33). The trawl is left in the water for four hours before the line is hauled in either by hand or hydraulic hauler (Siminoff 1978:34). Trawlers usually catch halibut or cod.

The ground fishery today is still an important part of this area's economy. Both hand-lining and long-lining are still popular. Granted, both are now mechanized and thus more productive, but the fish are still cured essentially the same way.

D. SHELL FISHERY

As for shellfish, the lobster fishery has been a valuable part of the economy in this area. In the nineteenth century, lobsters were fished with a gaff (a boat hook or light spear) from a dory (a small flat-bottomed boat). Lobster boats are now power-operated and larger than in the past. A line, the length of which depends on the depth of the water, is attached to the trap, and a buoy is placed on the end of the line. The line is used in hauling the traps aboard the boat. Traps are set on the rock ocean bottom where the lobsters crawl. The traps are hauled the next day or as soon thereafter as weather permits (McPhee 1963:108). Lobster season is usually during the winter months. During the off-season, fishermen build their traps and harvest other species. For examples, scallops and clams which are seasonally harvested are also profitable sectors of the commercial fishery in this area.

Today, reports indicate herring (Appendix B), ground fish (Appendix C) and lobster (Appendix D) are still the mainstay of the commercial fishery of the West Isles area. The fishery in this area has evolved over several hundred years. The success of the fishery each year is directly related to the availability and abundance of fish resources, as well as the conditions of the market.